

MOTOR AGE

FOR AUTOMOTIVE SERVICEMEN

A CHILTON PUBLICATION

OCTOBER 1940

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of the Cars of 1941

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the Cooling System

by Bob Hankinson

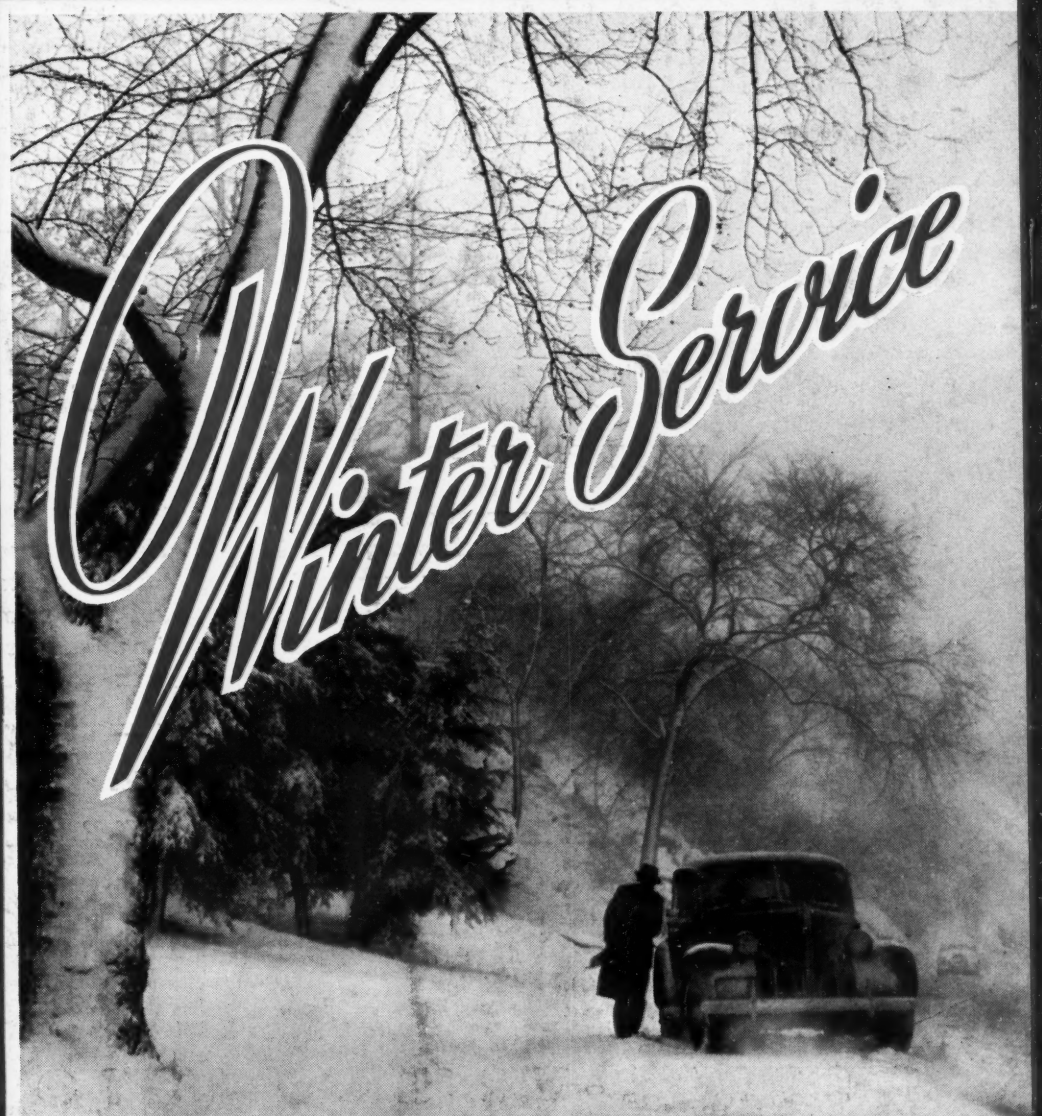
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The Private Life
of a Bad Brake

by Henry Jennings

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Hundreds of Other
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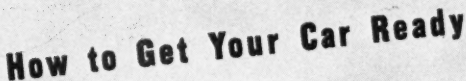
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How to Get Your Car Ready



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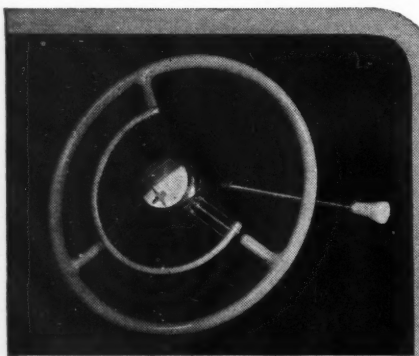
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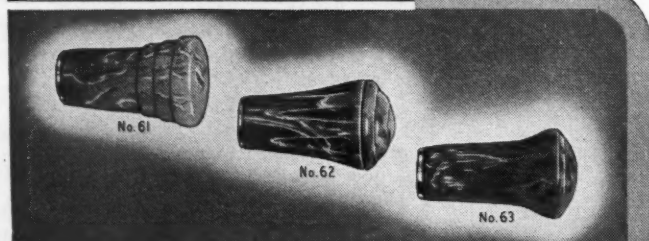



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MOTOR AGE

With Which is Combined **AUTOMOBILE TRADE JOURNAL**
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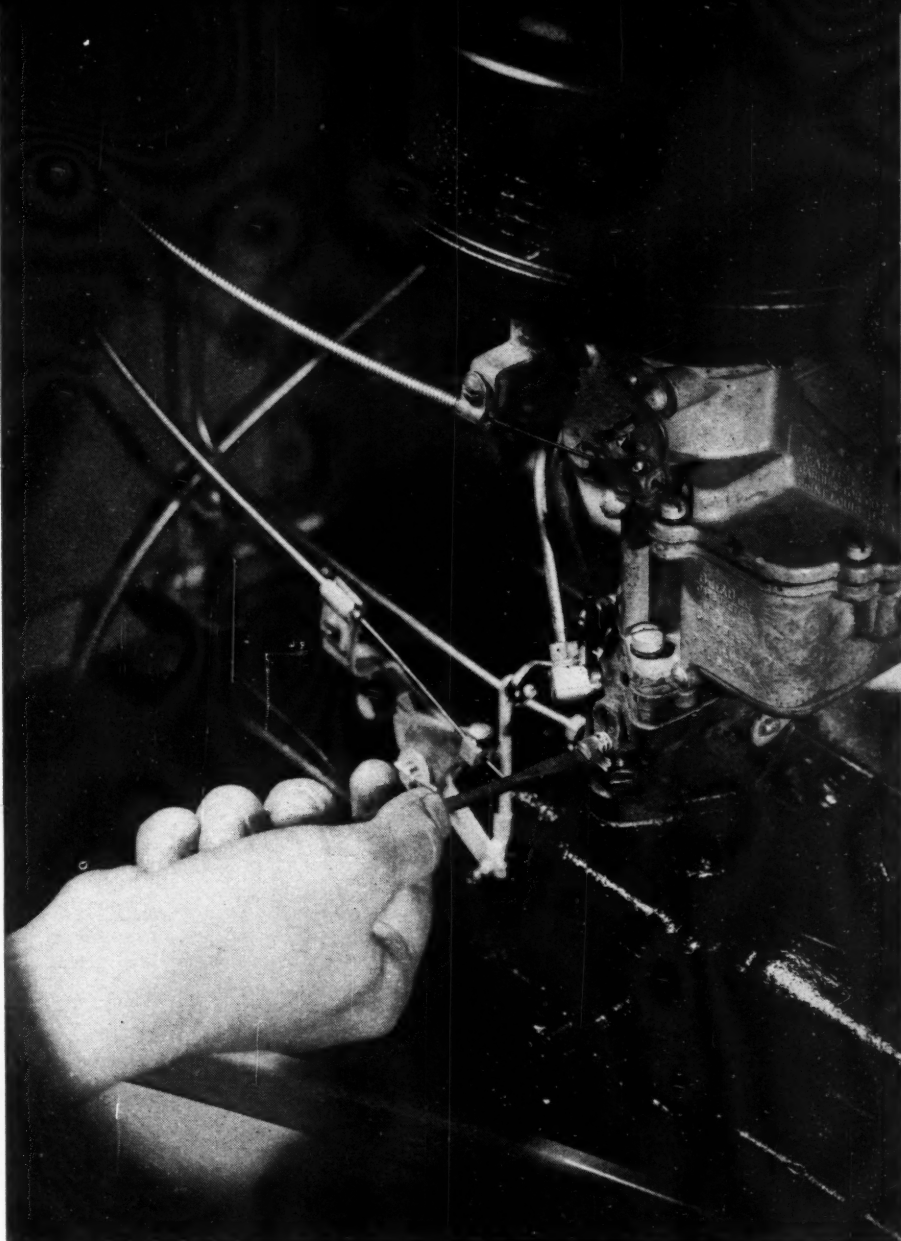
Shop Talk

Tune Up

There is no doubt about it, a good tune-up job will certainly make a car step out and go. Tune up does so much that unfortunately many mechanics expect it to do everything, and neglect selling a carbon and valve or an engine rebuild job when they are called for. Don't forget there is a lot of profit and customer good will in doing a complete job.

Shop Kinks

While on the subject of the Clearing House, you will probably notice that during the past few months I have been including a number of shop kinks sent in by the readers. I'll pay five bucks each for those that I think are worth printing. So send them in. This is an old feature of Motor Age which was discontinued for several years. The reason I dropped it was not that you didn't send in any material, but that the material didn't seem to be so hot. And for the love of Mike don't send in that stunt of making a snare to pull out broken axle stubs. That idea was new way back in 1895 and during the years that we were paying for shop kinks, it came in at least once each month. I'd like to point out that really good shop kinks are rather difficult to find. Many of those received in the past were turned down because there were tools or equipment already on the market that would do the particular job quicker and better. In my opinion, the best type of shop kink has to do with ways and means of doing a job, rather than a tool used for doing the job. For instance, the ways and means of replacing the front main on a



MOTOR AGE

OCTOBER 1940

Plymouth without removing the timing case cover would be worth while.

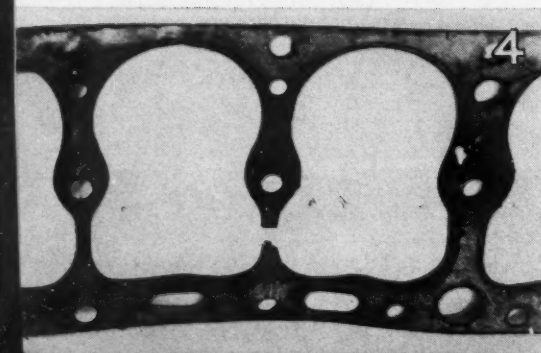
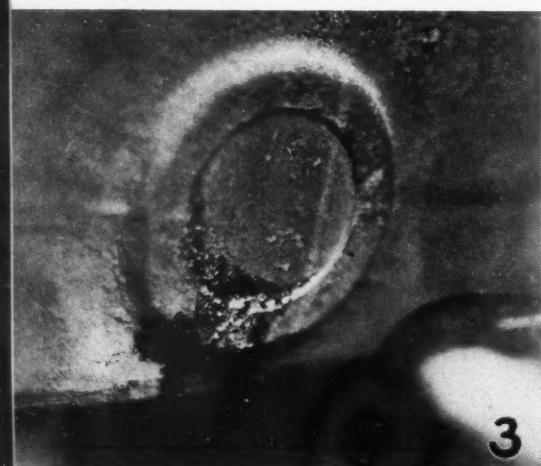
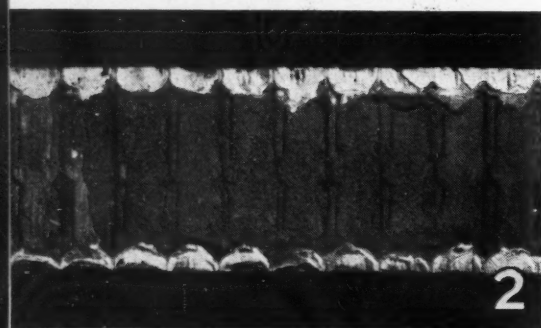
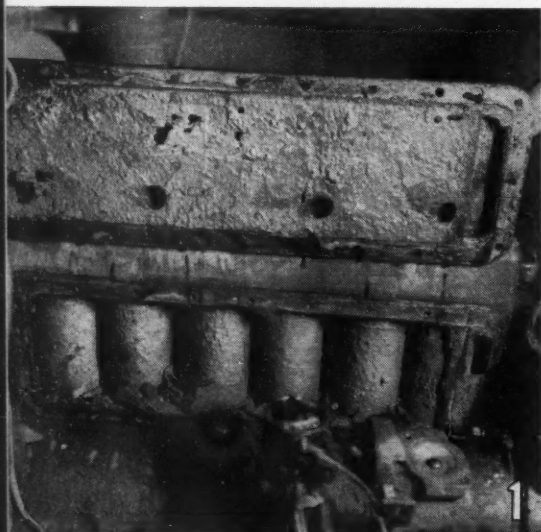
Valve Jobs

Stopped in to see my friends Frank and Dick who operate the F and D Service Station in Philadelphia. When it comes to floor space their shop isn't much to look at. As a rough guess I'd say they can get six cars into the shop at one time. But when it comes to business that's a different story. Dick

showed me his books and pointed out that they have averaged better than one carbon and valve job per week since they bought valve reconditioning equipment, about two years ago. There are plenty of bigger shops that could take lessons from Frank and Dick.

Bill Tobolsky

Winter Service for the COOLING SYSTEM



A thorough job of getting your customers'

By BOB HANKINSON

SIMPLY dumping the required amount of anti-freeze into the radiator to obtain the desired protection against freezing isn't all there is to this business of preparing the cooling system for winter. Not by a long shot!

The car has been driven for the past six months without a thought given to the cooling system, unless it happened to get plugged up and

boiled over. During that time a lot of things could have happened, and before the car is turned over to the customer as being safe to drive during the winter, the things that have happened to the cooling system should be corrected.

Let's look at some of the common causes of cooling system troubles. Rust undoubtedly heads the list, and is largely responsible for over-

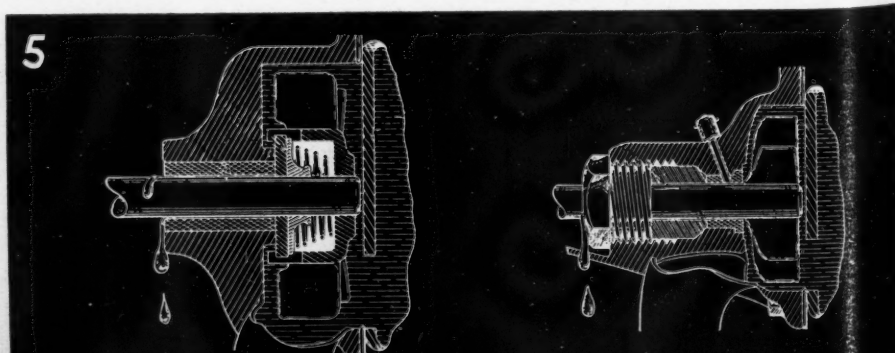
1. Rust accumulates in the water passages of the block and builds up to form local hot spots.

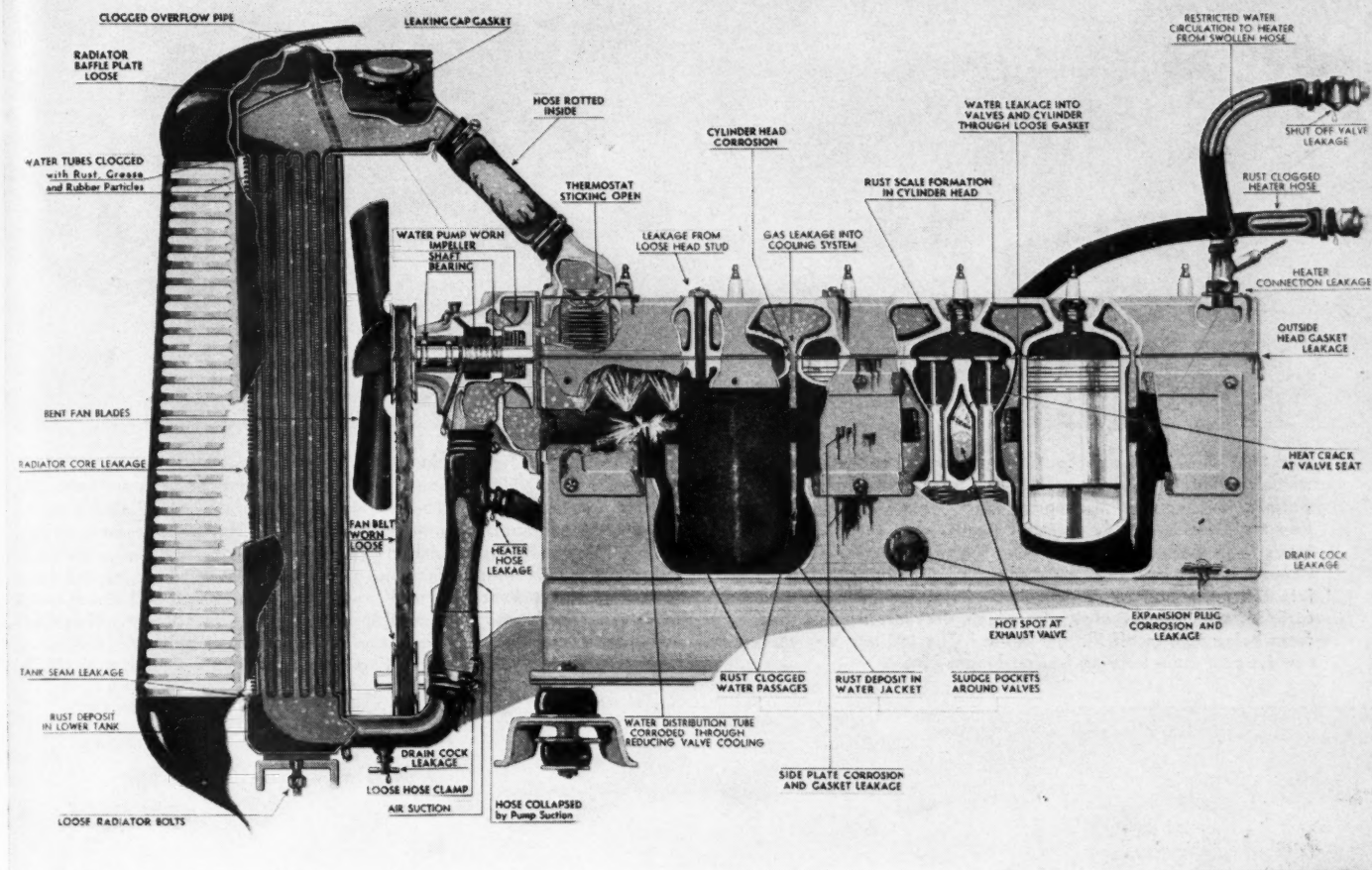
2. Sediment and rust particles clog the water channels of the radiator core. If the regular cleaning compound will not clean this out, the radiator tanks will have to be

removed and strips of steel run through the passages.

3. Leaking expansion plugs have to be sealed before anti-freeze can be installed.

4. Broken head gaskets are responsible for cooling system solution getting into the crankcase, and causing serious trouble.





Photos courtesy National Carbon C

cars ready for winter now will save trouble and expense later

heating, localized hot spots, plugged radiator cores and sticking thermostats. Rust forms in the engine and builds up on the iron walls of the water jacket. Circulation keeps loosening the rust as it forms, the larger particles settling in the water jackets and the smaller particles being carried to the radiator where they gradually plug the core. In certain territories water con-

tains a high percentage of lime which deposits in the form of a hard scale in the cooling system, reducing heat conductivity and eventually causing overheating and boiling.

Water corrosion plays its part in cooling system troubles, particularly in those sections where water has a high alkali content.

(Continued on page 72)

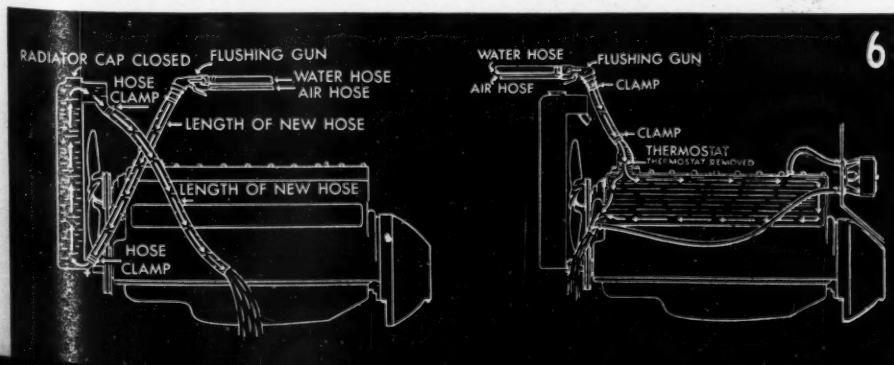
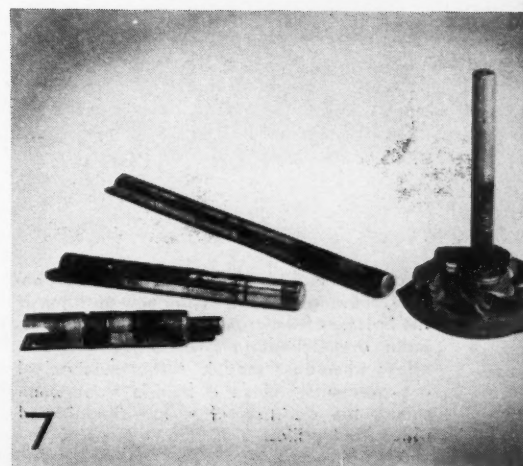
5. Leaking water pumps not only cause loss of the cooling system solution, but permit air to enter the system, and accelerate the rust and corrosion action.

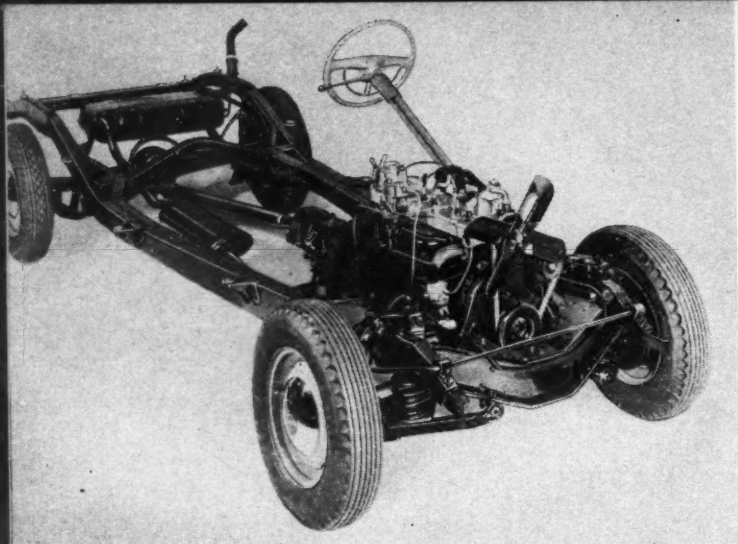
6. Flushing the block and the radiator separately, and in the reverse direction to normal flow is the best way to clean out the

system. Use air pressure with the water to provide force to wash out scale particles.

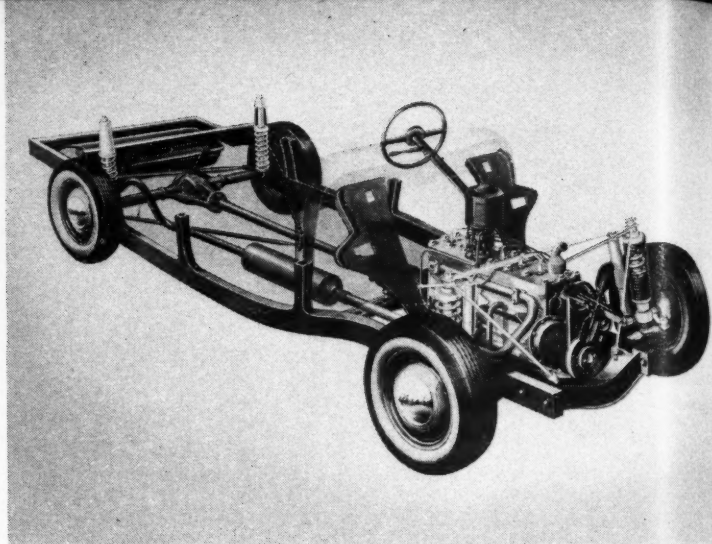
7. Corroded water pump parts show the need for cooling system service.

8. Water hoses deteriorate and should be replaced before rubber particles can break loose and clog the radiator core.

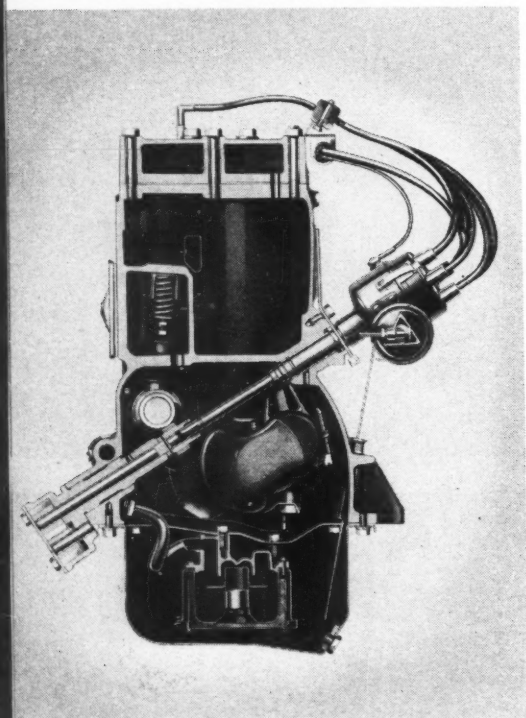




The 1941 DeSoto chassis features a new box-section type frame which is stiffer than the type formerly used, and at the same time permits lowering the car body. A new rear stabilizer prevents side motion of the body on rough roads, while the front sway-bar tends to keep the body level when rounding curves. The steering wheel is of the two-spoke type and a semi-circular horn ring extends into the lower half of the wheel. Tire size has been increased to 6.25/16, and a new safety rim which prevents a punctured tire from being thrown off the rim is used. The 105-h.p. engine uses a new type of main bearing having longer life.



An entirely new type of front suspension is used on the new Nash Ambassador "600", illustrated. It employs 20 in. long kingpins set vertically, and supported at the top by a horizontal steel tube extending across the top of the engine, and at the bottom by a heavy bridge-type truss that is part of the welded steel body. A collar rides up and down the lower section of each kingpin on six caged roller bearings, carrying the front wheel spindle at its lower end. Its upper end supports a coil spring which carries the body weight on a tapered roller bearing. Direct acting shock absorbers operate parallel to the kingpin. Rear suspension consists of two coil springs with direct-acting shock absorbers set inside the coils.



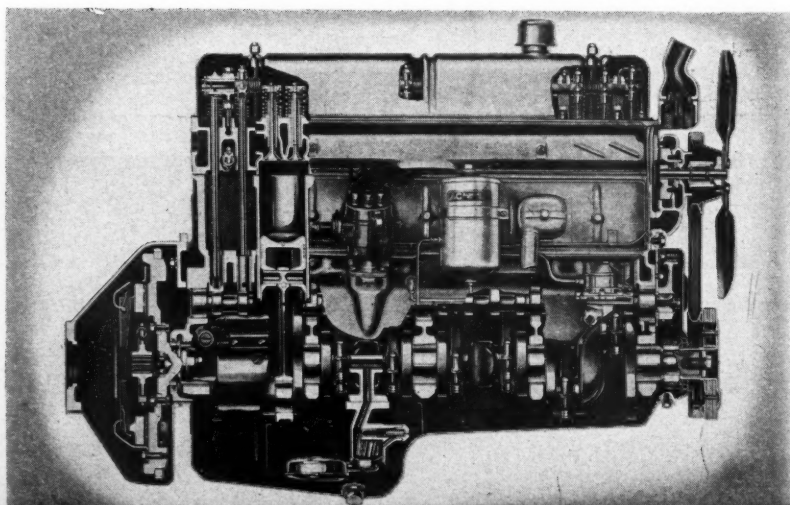
Cross-sectional view of the 1941 Pontiac engine, showing location of the new oil filter at the bottom of the crankcase. Either the 6-cylinder or 8-cylinder engine is supplied with either wheelbase model. Other mechanical improvements include a built-in front stone shield, the addition of a fan shroud and wider front grilles.

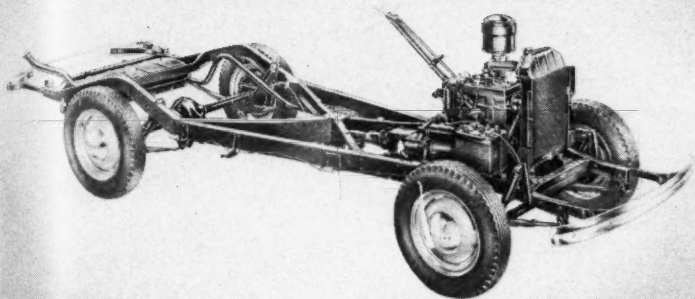
Side view of the Buick engine for 1941. In addition to the use of compound dual carburetion, the engine has many mechanical improvements. 10 m.m. spark plugs are standard, main bearings are of precision type, high lead babbitt with a porous matrix on a steel back; rear engine mounting has been changed to a single support, and a heavier vibration damper is used; a new and larger water pump for improved cooling. Service men will be interested in the new single-piece hood latched on both sides.

Mechanical

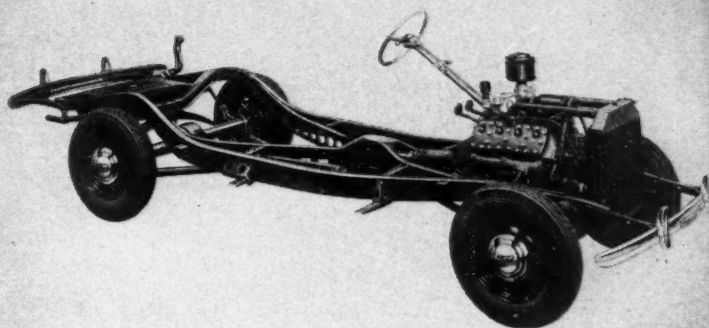
ON THE

For detailed specifications and tune-up





A new frame of the "K-X" type of double drop design having a straight "X" member is used on the 1941 Willys-America. It is more rigid torsionally and stiffer transversely, relieving the car body from stresses due to twisting and produces improved roadability. The rear tread has been increased 2 inches. The new frame, in combination with the adoption of a new hypoid rear axle, permits a low center of gravity. A new transmission with all helical gears and with the latest blocker type synchronizers is being used in connection with remote control gear shifting which is standard this year. Spring suspension has been improved for greater riding comfort. Engine h.p. has been increased to 63.

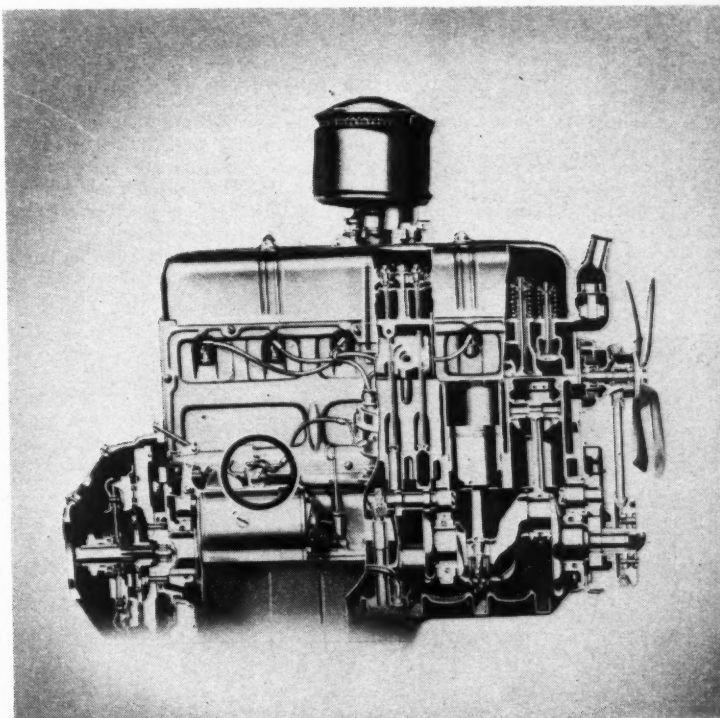


The frame of the 1941 Ford is of new design for increased rigidity. The X-member has a box-type center section approximately 9 in. deep to permit clearance for the torque tube which passes through the "X". The X-member center section consists of two large steel stampings to which the legs or channels of the X-member are flash-welded. Wheelbase has been increased to 114 in. Rubber insulators for the body bolts are larger, a total of 14 body bolts being used—6 on each side and 2 at the rear of the body. New rear springs with lower frequency and a better balance between front and rear contribute to riding comfort.

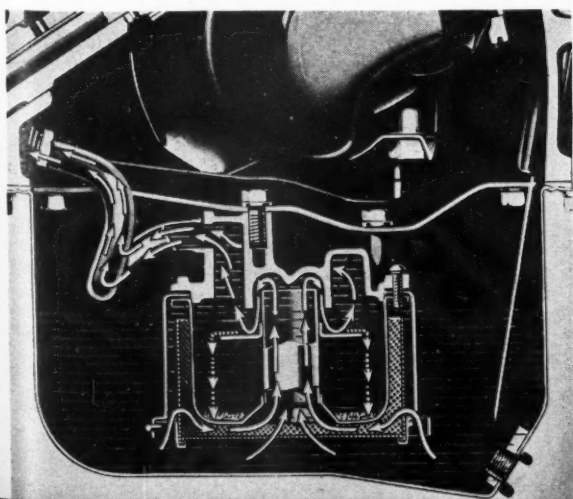
Changes

1941 CARS

data, see pages 57 and 60



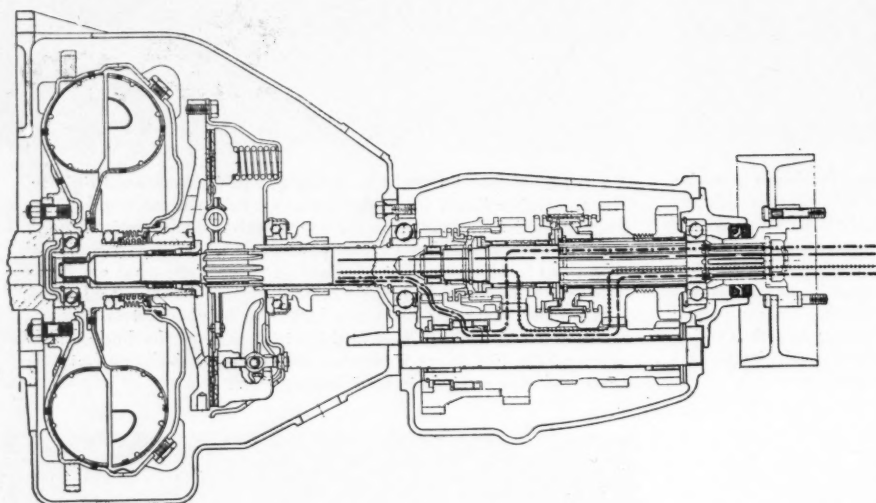
The increase to 90 h.p. for the 1941 Chevrolet engine has been accomplished largely by increasing the compression ratio to 6.5 to 1, redesigning the combustion chamber and using a cast alloy iron piston with a flat top and a slipper skirt. Automatic spark advance has been increased in range, with vacuum advance up to 20 deg. 10 m.m. spark plugs are standard. Ignition system incorporates a polarity reversing switch mounted on top of the starter. This switch reverses the direction of the current through the breaker points each time the starter is used.



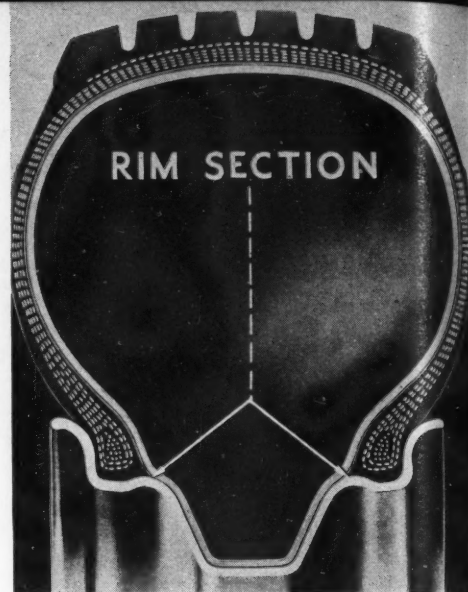
The new built-in oil filter is used on the 1941 Pontiac engines. Oil enters through the bottom, passing through a screen which removes the large particles of dirt. Then it enters the inlet pipe and is drawn upward against the bottom of the inverted cup. This changes its direction and causes it to flow downward around the outside of the inlet pipe for a short distance where it strikes a flat baffle. The baffle causes the direction of the oil to be sharply reversed, throwing all particles of dirt out of the oil stream and into the settling chamber where they settle to the bottom. After reversing its direction at the baffle, the oil is sucked through the oil pump inlet into the pump, and then forced to the engine bearings.

Mechanical Changes

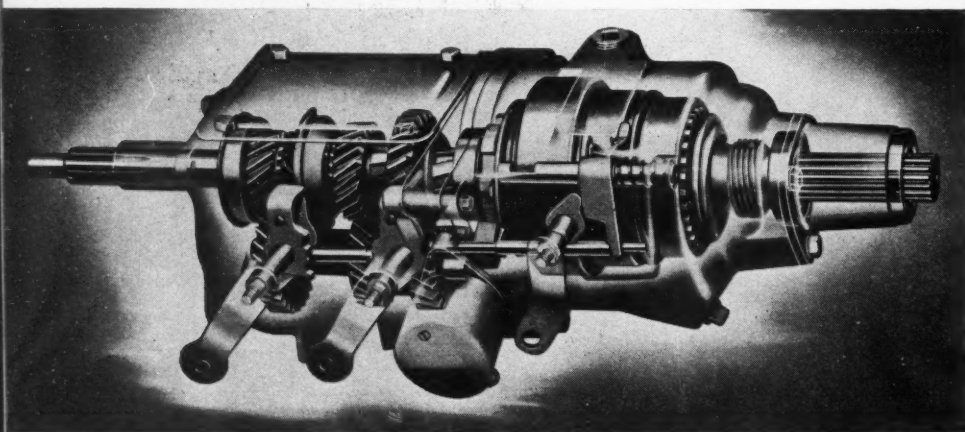
ON THE 1941 CARS



Here is a diagrammatic view of the new DeSoto Simplimatic transmission and Fluid Drive. The Fluid Drive unit is essentially the same as that used in other Chrysler cars in the past, but the transmission is entirely new. Four forward speeds are provided, with only two forward gear shift lever positions. In the low forward position, the transmission operates in first and second gears only, while placing the shift lever in the high forward position makes the transmission operate in third and fourth gears. The actual gear shift from first to second and from third to fourth is accomplished by vacuum and controlled by the accelerator pedal. Reverse gear is obtained by placing the gear shift lever in the normal reverse position.



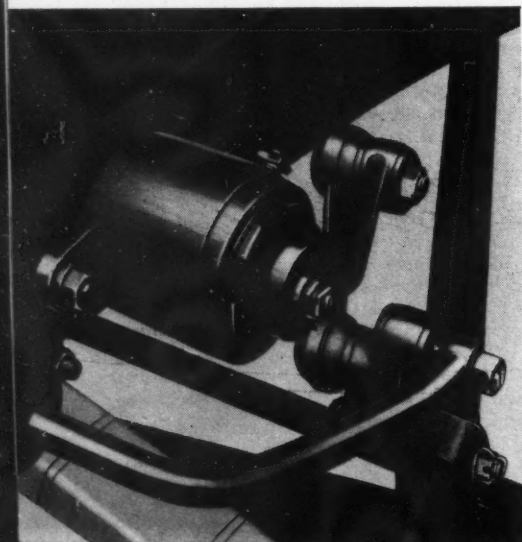
"Safety Rim" wheel design is one of the unseen features of the 1941 Plymouth. This rim, which has a slight "hump" at the edge of the tire bead section and the drop center, prevents the punctured tire from slipping off the wheel even at high speeds. A new transmission with a higher second gear ratio is standard, with extra equipment of Powermatic shift being offered. The vacuum power from the engine does most of the work of shifting from one gear to another. Rear springs are mounted in rubber at both ends, and metal spring covers are standard.



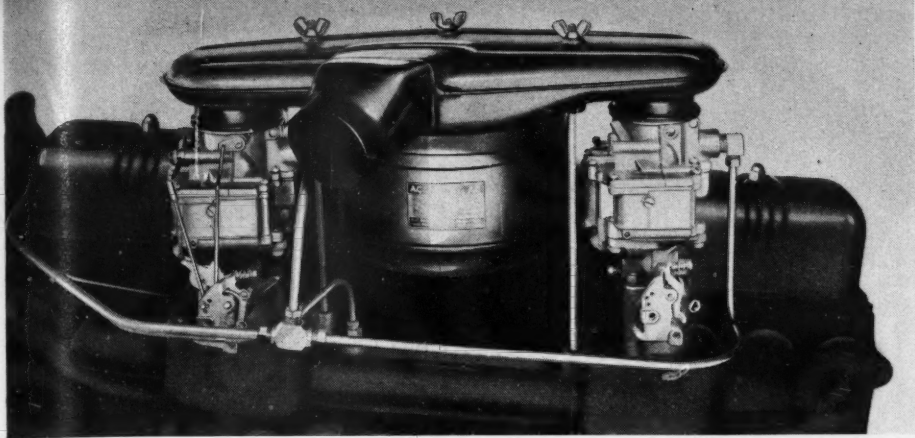
Phantom view of the transmission and over-drive unit available at extra cost on the 1941 Studebaker Champion. This provides a cruising "fourth" speed for smoothness and economy of operation. Standard transmission provides silent helical gears and clashless synchronizers, with remote control gear shifting. Engine h.p. has been increased to 80.



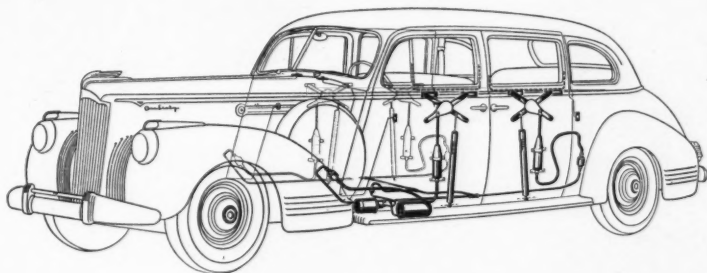
The planar type front wheel suspension of the 1941 Studebaker Champion is strengthened and improved by the addition of one leaf. Threaded pins are used at outer ends of control arms for supporting the steering knuckle pins. The forged steel support arm is anchored to the frame in a rubber bushing to minimize road shock.



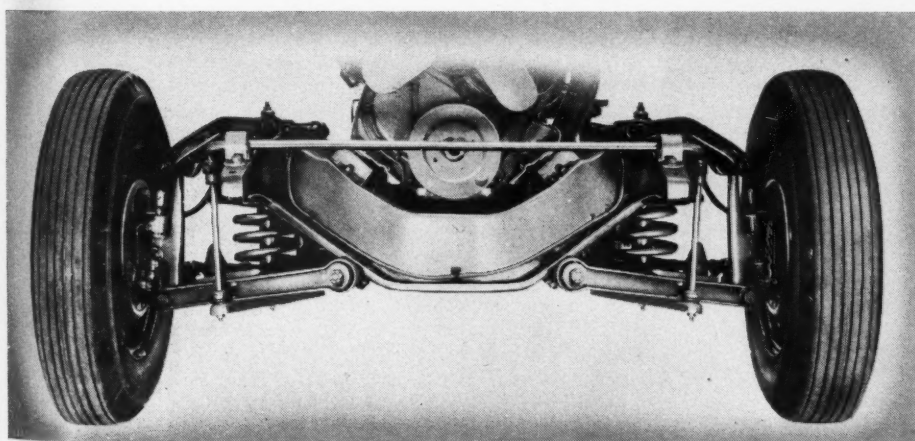
Front shock absorbers on the 1941 Ford car are larger, making them the same size as the rear shocks. Both front and rear units have a new type metering adjustment with double tapered valve. A new stabilizer bar uses swinging shackle connections at the ends of the bar instead of having the bar ends slide in bushings. The shackles swing back and forth through a small arc as the axle moves up and down, the fore-and-aft movement of the axle being reduced because the front radius rods are longer. Connections to the front axle do not require lubrication. Stabilizer bar uses a ball and socket joint with oilless bushing.



Buick for 1941 features compound dual carburetion as standard equipment on all models except some of the Series 40, and available at extra cost on these. Both carburetors are connected to a common 4-port manifold, so that the inside barrels of both feed cylinders number 3, 4, 5 and 6, and the outside barrels feed cylinders number 1, 2, 7 and 8. Under normal load the front carburetor does all the work up to about 75 m.p.h.

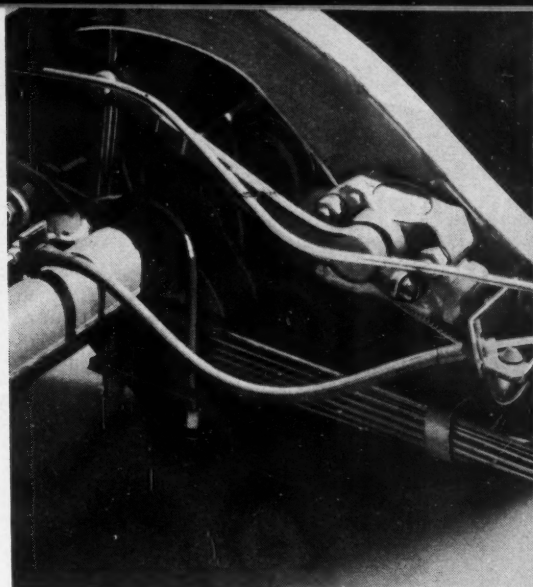


Windows on the 1941 Packard Custom 180 Series are raised and lowered hydraulically by simply pushing a button. Power is supplied by a reversible starting motor coupled to a hydraulic pump with a reservoir tank, the unit being located under the seat. Each window is fitted with a hydraulic cylinder which raises or lowers the window at the touch of a switch fitted on each door panel. The cylinders are solenoid controlled. An Electromatic clutch which provides automatic operation of the clutch without the use of the clutch pedal, full mechanical refrigeration and the Econo-Drive (overdrive) are offered as special equipment.

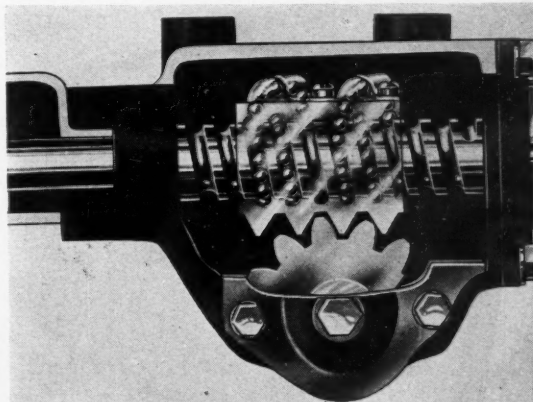


Front suspension of the 1941 Nash Ambassador Six and Eight. Note the aeroplane type shock absorbers mounted inside the coil springs, and the sway bar designed to prevent body roll when turning corners. Upper control arms of the front suspension are insulated. In the rear, aeroplane type shock absorbers are used in conjunction with long leaf springs fitted with metal spring covers. The Ambassador Six and Eight engines are twin-ignition, valve-in-head construction, the Six developing 105 h.p. and the Eight 115 h.p. The Nash "Weather Eye" system of conditioned air is increased in capacity. The bed-in-a-car feature is also continued in the 1941 models.

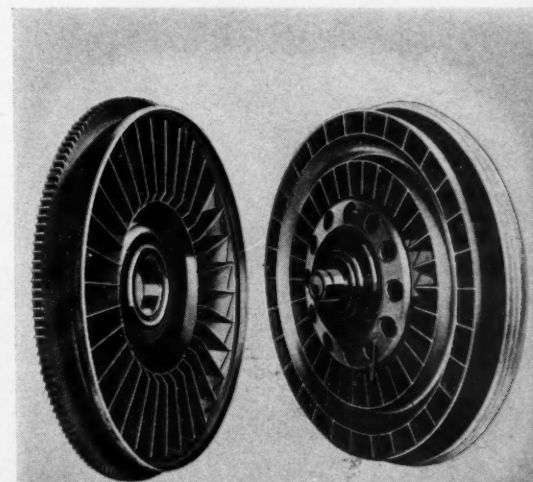
Dodge for 1941 offers as special equipment the fluid drive, consisting of an impeller fastened to the engine crankshaft and a runner or driven member fastened to the transmission main drive gear shaft. These two members are enclosed in a steel housing securely sealed, and containing 2 gallons of oil. Driving force is imparted to the driven member by the oil thrown off the vanes of the driving member. Improvements in standard equipment include a new frame of closed-in box section type, new gear shifting mechanism, higher second-speed transmission ratio, improved brakes with a new master cylinder, new safety-type wheel rim.



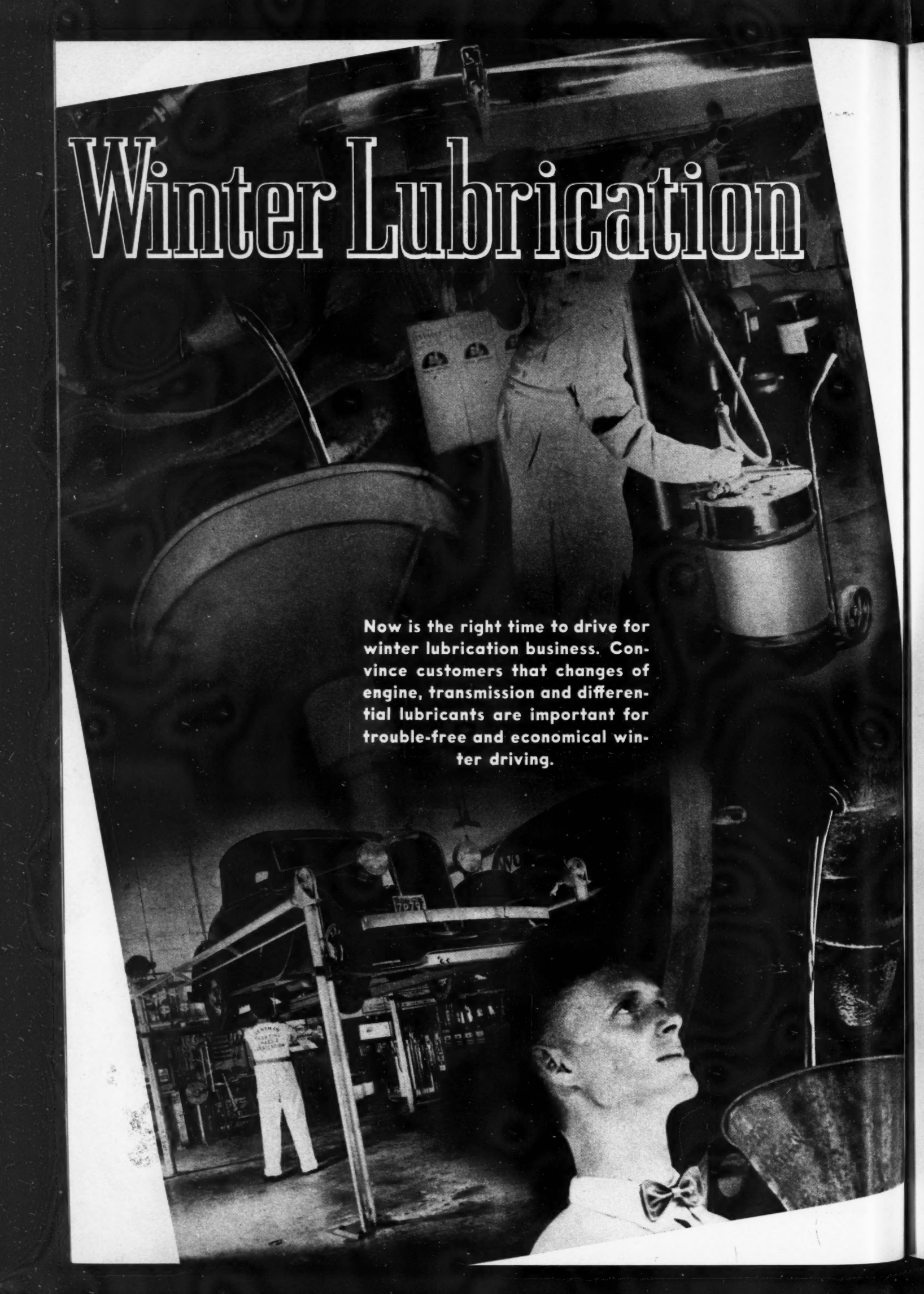
Spring action of the 1941 Cadillac has been improved through the addition of an auxiliary rubber bumper mounted on the frame over the rear spring. This bumper not only prevents bottoming but effects a variable spring rate when under severe deflection. The frame has been made more rigid through the use of box-sections at the front as well as at the rear, back of the X-member. Rear tread has been widened on all but the Model 67 and 75. The recirculating ball type steering gear is used on all models. One engine, a V-8, 150 hp., is used on all models.



The recirculating ball type steering gear used on the 1941 Buick, contributes ease of handling. In addition, the front hubs, spindles and the inner and outer wheel bearings are larger. Direct cross steering tie rods for the Series 90 eliminate the intermediate steering arm and bracket assembly. All series have a new tubular transverse radius rod with new brackets at frame and axle housing. The rear wheel tread has been increased.



Winter Lubrication

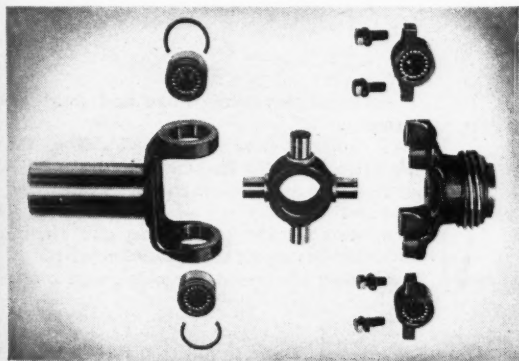


Now is the right time to drive for winter lubrication business. Convince customers that changes of engine, transmission and differential lubricants are important for trouble-free and economical winter driving.

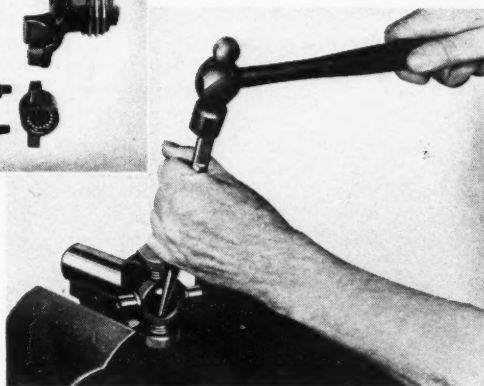
Universal Joint

OVERHAUL

*A step by step procedure
covering the 1939—1940
Chevrolet universal joint*



Left, disassembled view of the complete universal joint. All parts must be carefully inspected for wear.



Right, driving the caps from the yoke with a drift punch held in the center of the trunnion.

TO overhaul the universal joint of the 1939 and 1940 Chevrolet, proceed as follows:

1. Remove the four cap screws which fasten the retaining collar to the ball retainer, and slide the ball back on the propeller shaft housing.

2. Remove the four cap screws which fasten the front trunnion bearings to the front yoke. Remove the two front yoke trunnion bearings and split the joint.

3. The rear yoke and trunnion can then be removed from the propeller shaft splines. The front yoke can be removed from the transmission mainshaft by removing the bolt and lockwasher.

4. Wash all parts in a cleaning solution, and inspect the yokes, trunnion and bearings for wear. Worn or damaged parts should be replaced.

5. Remove the lock rings from

the trunnion bearings and drive the caps from the yoke, using a drift punch in the center of the trunnion as shown in the illustration. After the trunnion has been driven down to the yoke, raise the trunnion and slip a flat washer 15/16 in. in diameter over the bearing. Again drive on the center of the trunnion until the bearing is free of the yoke. This method prevents cocking the bearing, which would result in damage to both the yoke and the bearing.

To reassemble the joint after parts replacements have been made:

1. Install the front yoke and speedometer gear on the transmission mainshaft. Install the lockwasher and bolt.

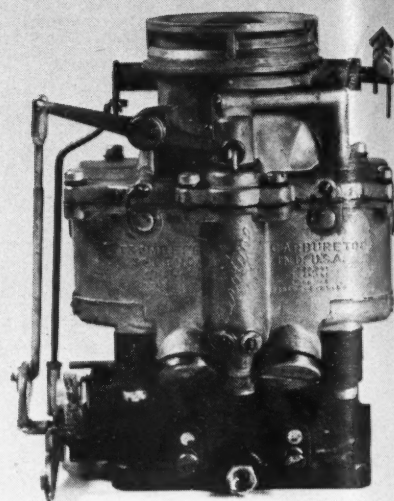
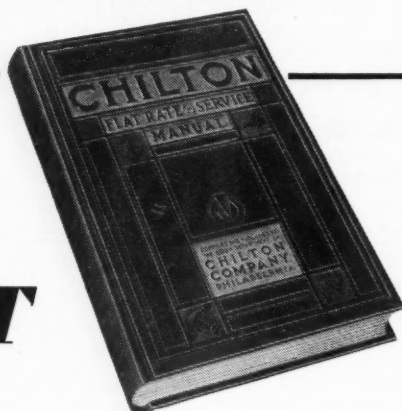
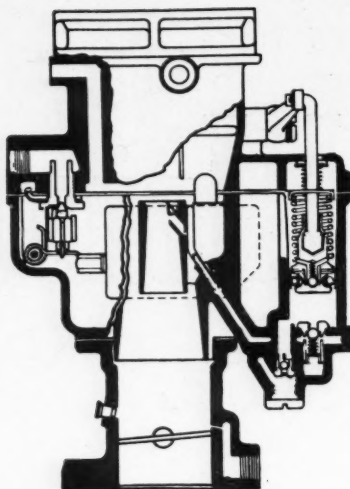
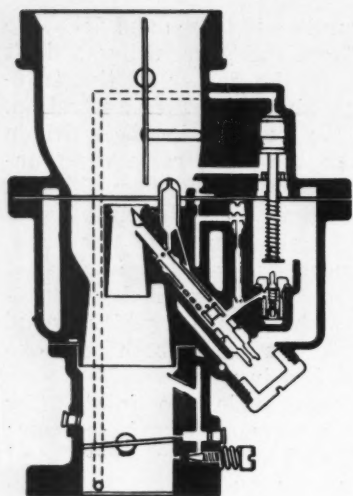
2. Install the trunnion by threading it into the rear yoke.

3. Coat the inside of the trunnion bearings with light cup grease, and install the 19 roller bearings. Then start the trunnion bearings into the rear yoke, at the same time fitting the ends of the trunnion into the bearings. Press each bearing into the yoke just far enough to install the snap ring. Install the rear yoke and trunnion on the propeller shaft splines.

4. Install the rollers in the front yoke trunnion bearings, and place them on the ends of the trunnion. Line up the trunnion bearings with the front yoke, making sure the pilots on the trunnions fit into the opening of the yoke. Install the lockwashers and cap screws and tighten them securely.

5. Slide the universal ball forward and install the four cap screws which attach the retainer collar to the rear of the transmission. Fill the universal joint housing with transmission lubricant through the opening for the speedometer driven gear.





1. Full view of the Stromberg AAV-2 carburetor.

FLAT

RATING

Overhauling the Stromberg AAV-2 carburetor used on Buick 60-80-90 and Chrysler C19-C20-C23-C24-C26, 1938 to 1940 models

The carburetor and its parts should be thoroughly washed with special cleaning compounds designed for this purpose

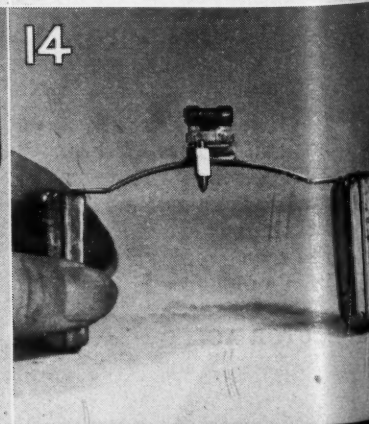
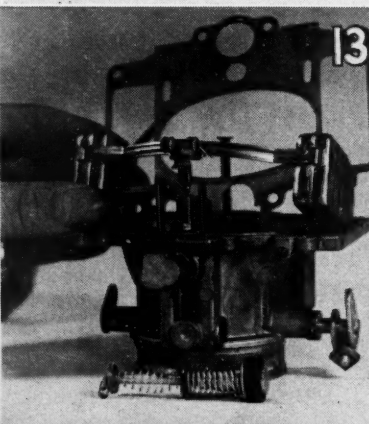
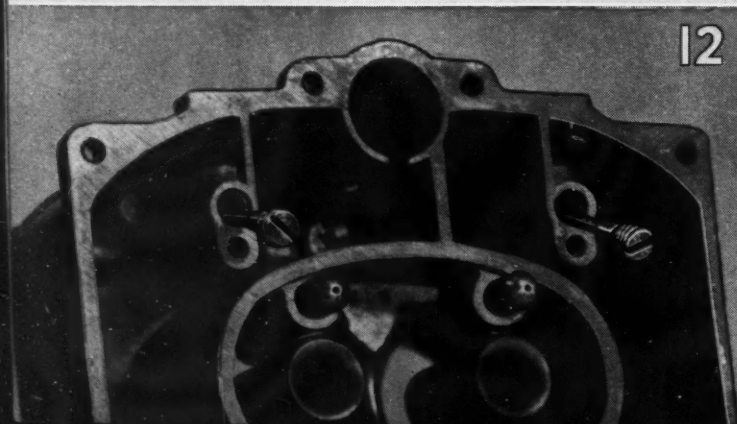
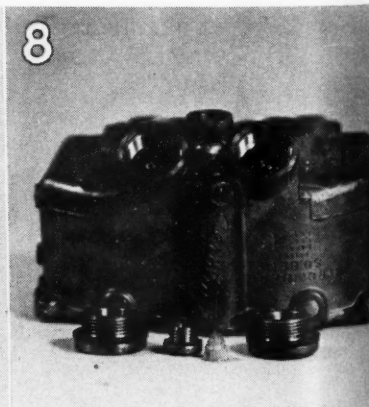
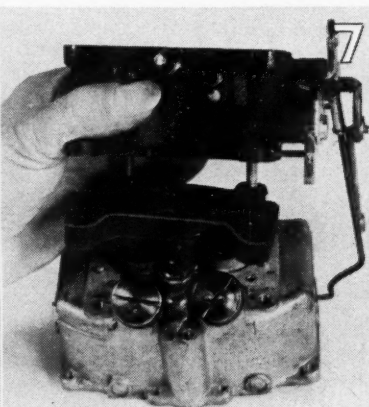
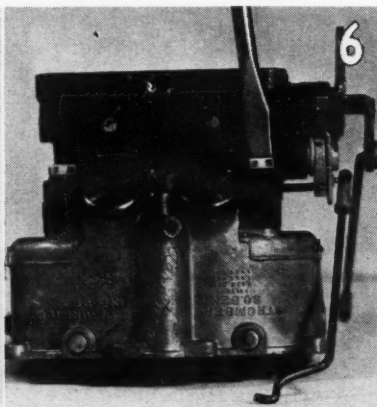
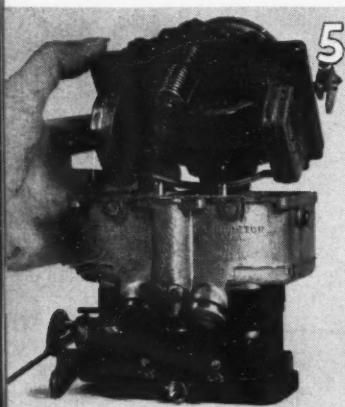
By **BOB TURNER**

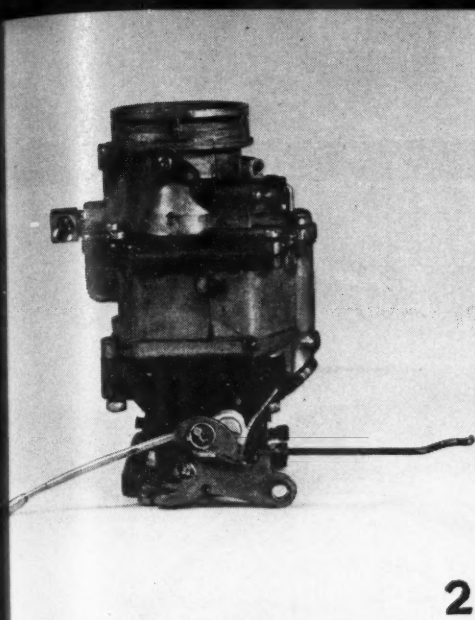
5. Remove the air horn and float assembly.

6. Remove the screws holding the throttle body to the main body.

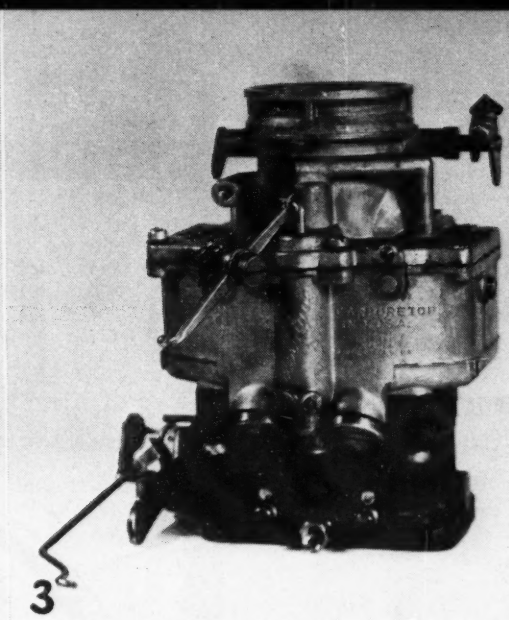
7. Remove the throttle body and spacer.

8. Remove the pump plug and strainer. Also remove the two main jet plugs. Removing the main jet plugs will allow

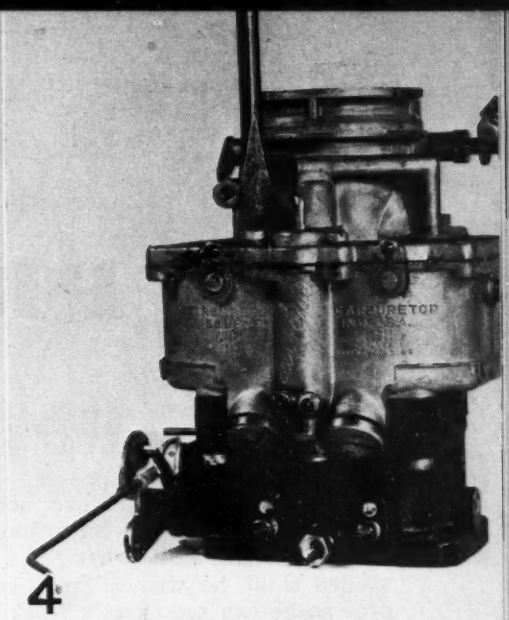




2



3



4

2. Disconnect the pump and fast idle rods.

3. The next step is to remove the pump lever rod.

4. Remove the screws holding the air horn to the main body casting.

CARBURETOR Tune-Up

either removal or cleaning of the main jets.

9. Remove the pump inlet valve and examine for free operation and leaking.

10. Remove the power by-pass jet and check for free operation and proper seating.

11. Remove the pump by-pass jet and thoroughly examine.

12. Remove the idle tubes and clean thoroughly.

13. Remove the float fulcrum pin and remove the float and needle assembly. It is necessary to remove the float assembly before removing the gasket.

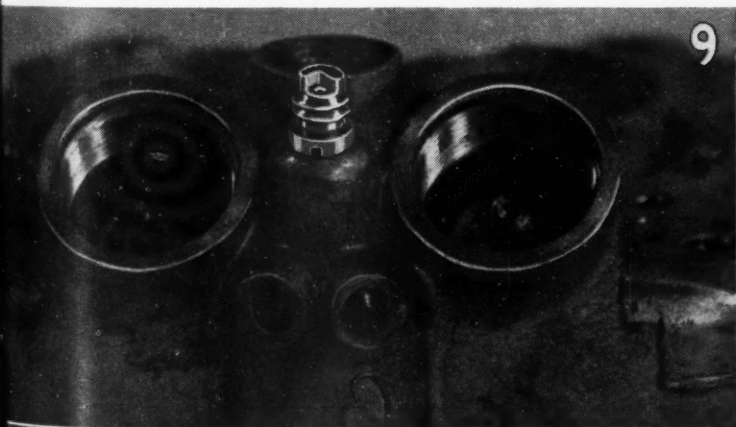
14. The needle may be removed from the float by sliding the needle off the retainer wire.

15. Examine the power vacuum piston for sticking and spring tension.

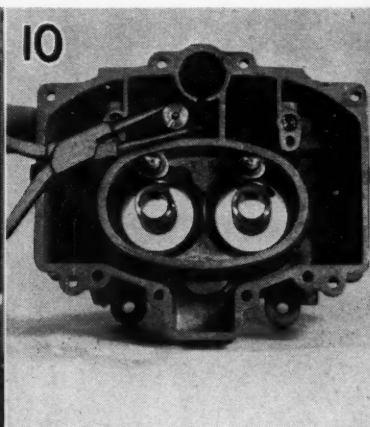
16. Remove the needle valve seat and examine for wear.

17. Clean all passages in the throttle body thoroughly.

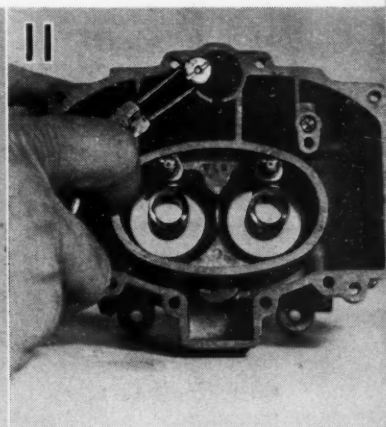
18. Remove the idle needle valves and examine both valves and seats for wear.



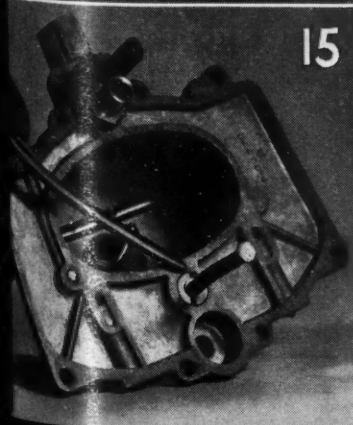
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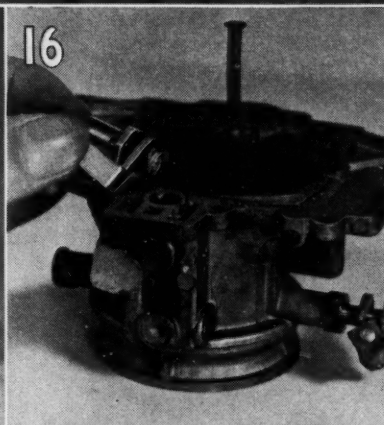
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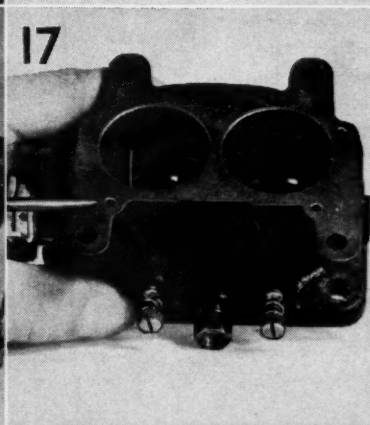
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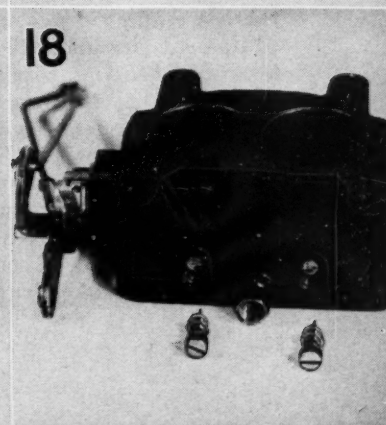
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16



17



18

THE PRIVATE LIFE OF A

WHEN a mechanic has done everything the doctor ordered and the brakes still behave like a spoiled child, he wishes for X-ray eyes so he can see exactly what is taking place within the brake drum, when the brakes are applied.

Most of the troubles are the result of faulty brake shoe adjustment. Improper adjustment causes brake shoes to bend and brake drums to wear prematurely and become out-of-round.

Fig. 1 is an illustration of a 2-shoe hydraulic, self-energizing brake with a single anchor. The anchor end of the adjustment is too high, causing excessive heel pressure on the secondary shoe. This has a tendency to bind the end of the shoe at "A" against the drum. When the brakes are applied, pressure is thrown against the primary shoe at "B," from where it is transmitted through the shoe "1" to the secondary shoe "2" by the adjusting screw and link "3." Since the secondary shoe is out of position it cannot follow the drum, and the pressure is passed along to point "A" of the shoe. With no backing from the drum, but with pressure at each end, the shoe has a tendency to straighten out.

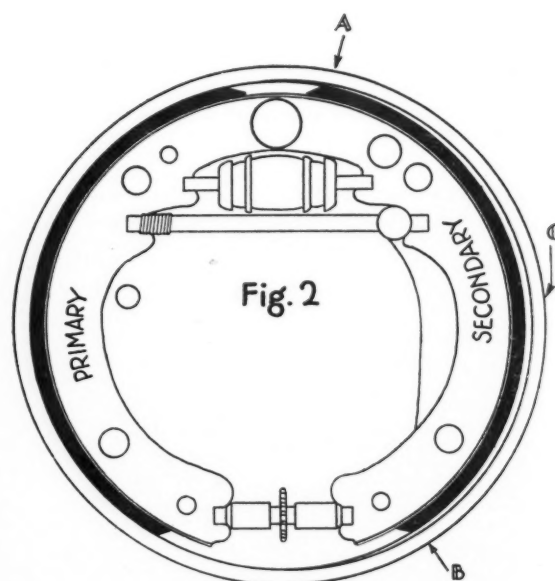
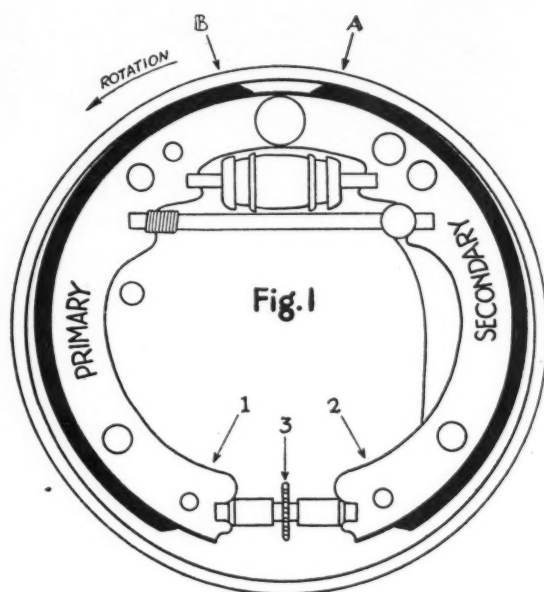
Fig. 2 shows what the shoe looks like when it has been relined and the proper adjustment made. Points "A" and "B" have the proper drum clearance, but "C" is so far away from the drum that very little brake lining on the secondary shoe will ever come in contact with the drum under pressure. Naturally, shoes in this condition cannot give satisfactory service. The sad part of it is that upon inspection the shoes appear to be O. K., and it takes a dummy drum or some shoe equipment designed for just that type of checking to discover the real cause of the trouble.

Fig. 3 illustrates what happens to a brake shoe when the shoes are not centered top to bottom. It is possible for the pressure on the secondary shoe to reach as high as 650 lbs. under these conditions.

When the brake drum is recon-

ditioned by turning or grinding, a smooth concentric surface is assured, but unless some provisions has been made to fit the lining surface to the increased inner circumference of the brake drum, the effect will be as illustrated in Fig. 4.

The brake shoes have been made to contact a drum of a specified size, and when this size is made larger, the shoe will give only a center contact unless it is relined with oversize lining of the correct thickness, or shims are installed



BAD Brake

By HENRY JENNINGS

Here's the inside story of what may be happening to the shoes and drums when it is impossible to get a good brake adjustment.

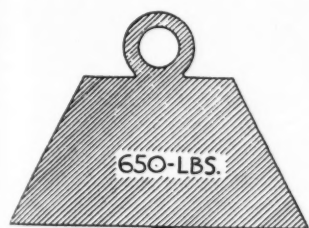


Fig. 3.

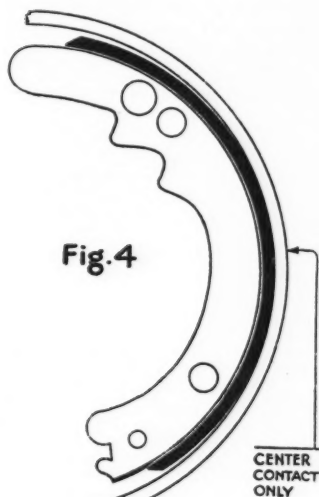


Fig. 4

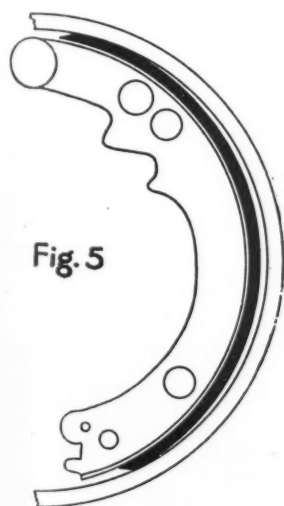


Fig. 5

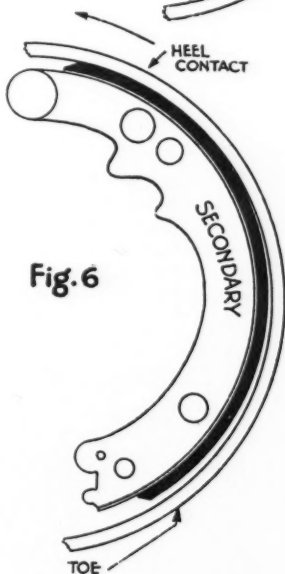


Fig. 6

lining life will result.

Fig. 5 shows what happens when a shoe is relined with oversize lining for use in a standard size brake drum, or when an excessively thick lining or shim is used after the brake drum has been turned. The contact is at the heel and toe only, with most of the lining clear of the drum. The lining at the heel and toe will be practically worn out before the largest portion of the lining ever comes into contact with the drum. If the undersized shoe is adjusted to proper heel clearance, the contact surface is only the heel of the shoe, as shown in Fig. 6. Naturally, if the shoe is undersized and the heel is adjusted to proper clearance, the toe must be a considerable distance away from the drum.

What happens when the lining is improperly installed on the shoe is shown in Fig. 7. The performance of the brake will not only be erratic, but the lining will be short lived. A brake lining stretcher will pre-

(Continued on page 98)

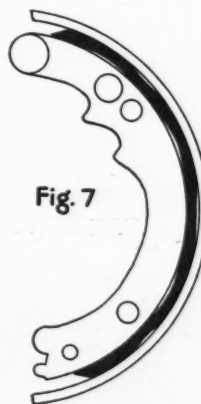


Fig. 7

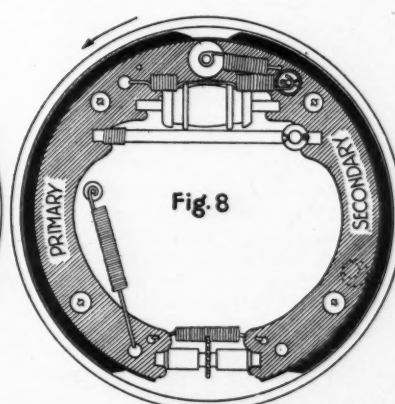


Fig. 8

under the lining. Only the lining on the center part of the shoe will contact until the lining is almost worn out at this section, the contact gradually increasing with the wear. In addition to an unsatisfactory brake performance, short



QUICK SERVICES at Muller Bros. are the magnets that attract trade. Gasoline and oil sales, lubrication, tires, accessories, car washing and polishing, battery service . . . these and other frequently performed services feed business to the completely equipped Muller Bros. repair shop. That's how super service works in Hollywood.



LUBRICATION Muller Bros. is completely departmentalized and fully equipped to perform all types of service in one spot—an entire city block on Sunset Blvd. near Vine. Six lubrication lifts keep lubrication jobs moving in and out rapidly. **TIRE SALES** are accentuated by the famous fifty-foot tower of used tires acquired on trade-in.



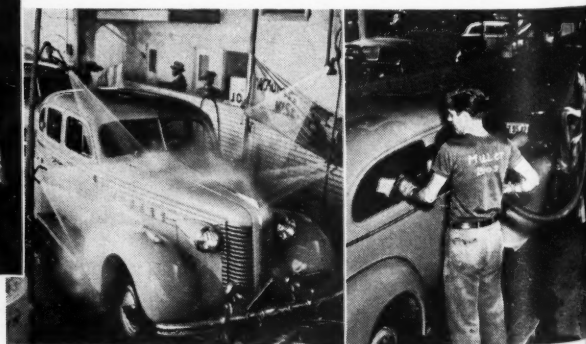
Super Service IN



MAJOR OVERHAULING (above) includes engine, clutch, transmission and rear axle jobs, wheel alinement and frame straightening, painting, body and fender repairs. They average seven wrecked cars for repairs every week—but regular overhauling is their strong fort.



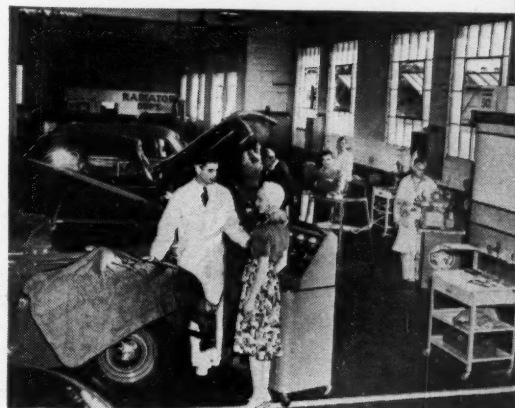
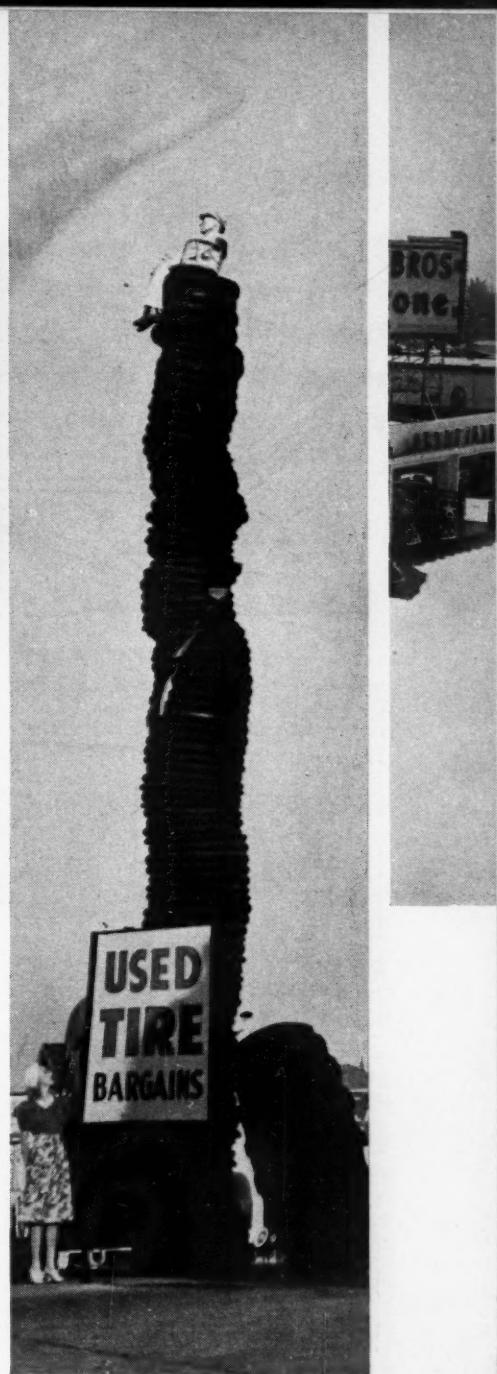
WASH & POLISH A \$50,000 car washing plant uses a conveyor system that steams, washes, cleans, rubs and dries cars in 15 minutes. Open air **ACCESSORY DISPLAYS** (shown bottom of opposite page) are located near entrance of car washing department where people wait for cars to be delivered. Volume items also include upholstery cleaning, body polishing and glass work.



SAFETY INSPECTION (left) Muller Bros. sell headlight adjustment, brake testing, adjusting and relining, tire inspection and a seemingly endless number of other safety services to keep cars performing safely. Two efficient brake testers test four thousand brakes a year at Muller Bros. Shown on the opposite page is Muller Bros. important **TUNE-UP DEPARTMENT**.



Photos by R. DeWitt Miller, Los Angeles



N HOLLYWOOD

Equipped to perform every type of automotive service in one spot, Muller Brothers super service handles 500,000 customers annually, grosses upwards of \$1,000,000 a year

By FRANK TIGHE

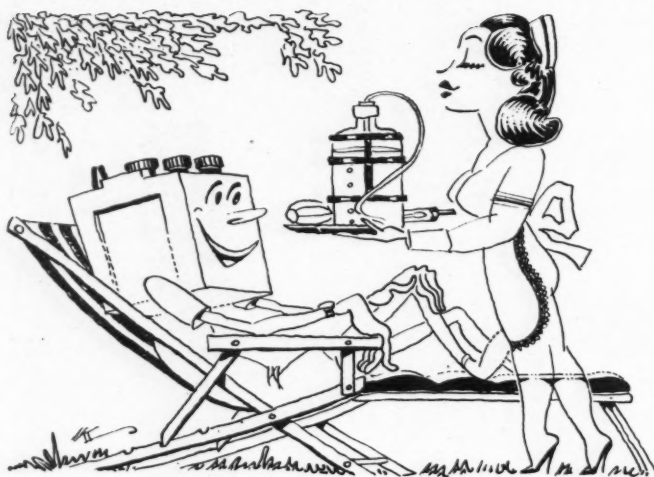
EYEING Muller Brothers' layout—walking around a full city block facing on Sunset Boulevard in Hollywood—into one busy department and out of another . . . you don't need a tourist guide to tell you that it's one heluva big super-service station.

In Hollywood, where they have run out of adjectives for bigness, co-owners Frank and Walt Muller, have built one of the largest super-service stations in the world. That

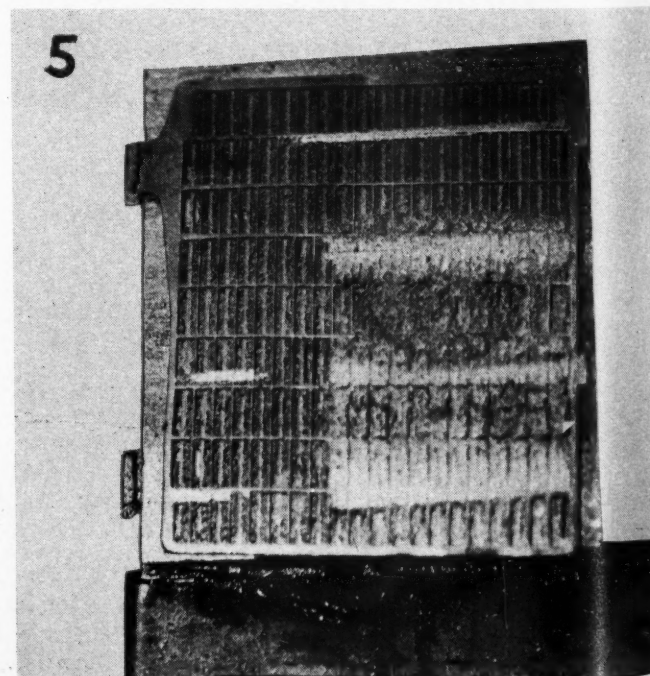
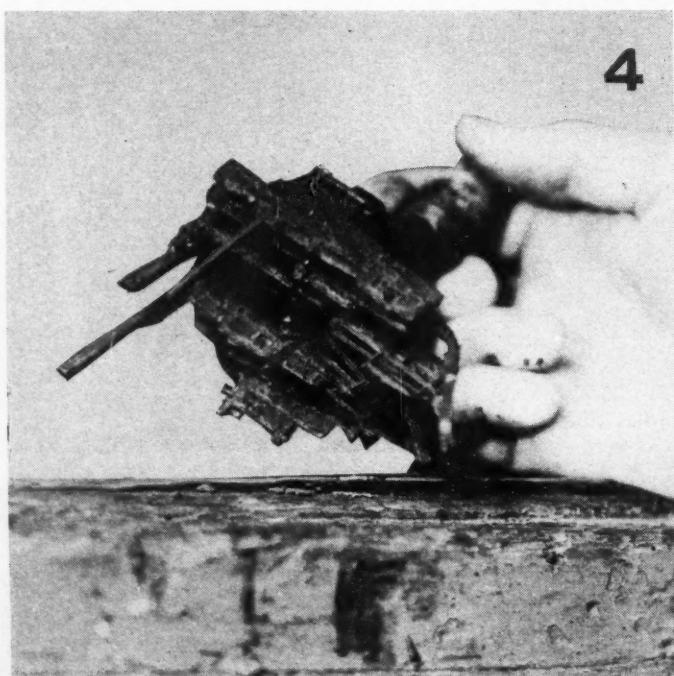
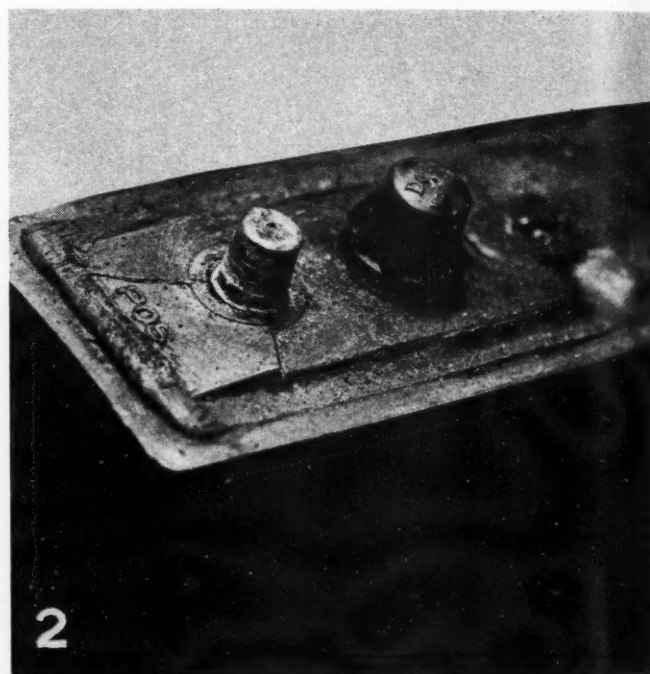
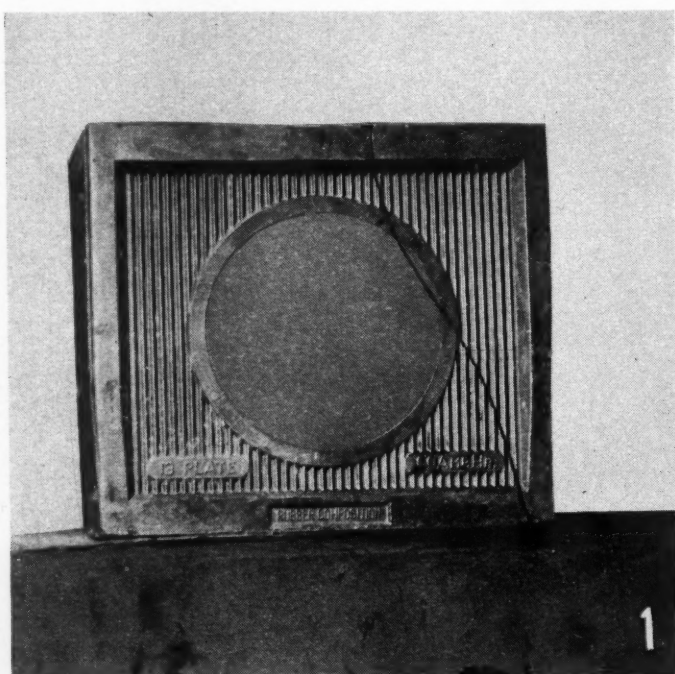
sounds typically Hollywood, but if you investigate further you find that there is one fundamental idea behind it all. An idea that can be easily applied in any service station, large or small.

Frank Muller describes it this way: "Ever since we opened this station our central idea has been to save the customer's time and energy by offering every type of service in one location."

(Continued on page 68)

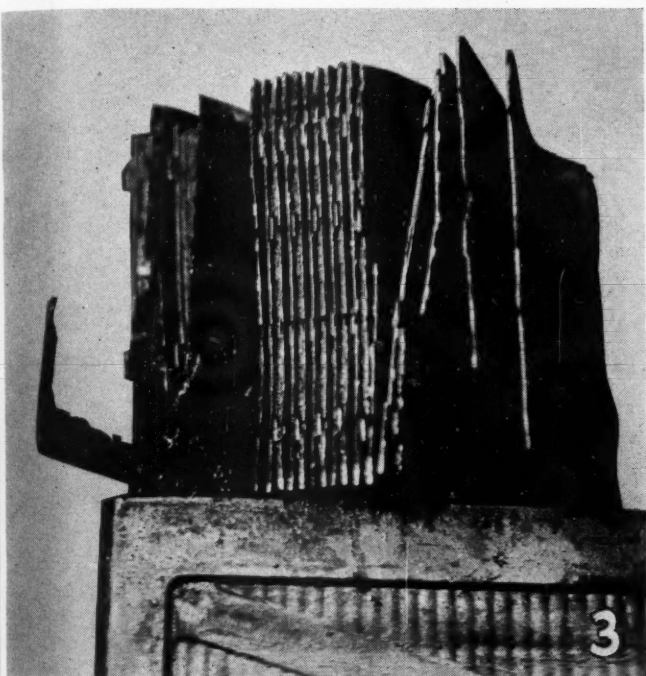


CARE OF THE



Battery

Careless handling and lack of attention are responsible for battery failure. Here are some examples of damage that could have been prevented through normal maintenance



1. CARELESS HANDLING. This battery has been dropped on its corner, causing the case to crack. Made of hard rubber, the case cannot be repaired. If the cells have not been damaged through loss of water, they can be installed in another case.

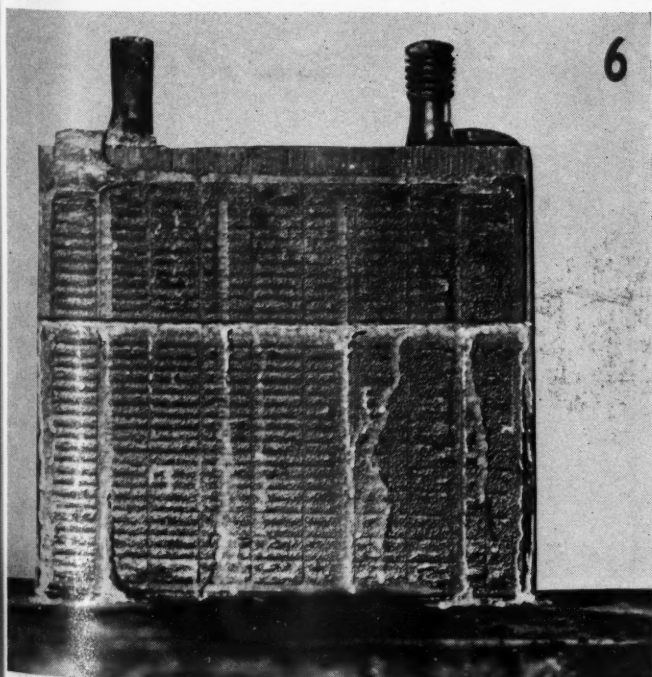
2. CARELESS INSTALLATION. Driving an old terminal connection onto the post, and the hammer slipped, cracking the cell cover plate. Worn or corroded terminals should be replaced with new ones—they are inexpensive, and often will prevent damage of this nature.

3. OLD AGE GOT THIS ONE. After long and faithful service, with many recharges to its credit, this cell finally gave up the ghost. Plates and separators crumbled away to dust when the cell was removed from the case, leaving nothing from which to attempt to rebuild the cell.

4. TIME AND LACK OF CARE. In a slightly run-down condition, this battery was left in the car when it was stored for the winter. The water evaporated, but the acid lingered on; in the spring when it was sent to be recharged this is all that was left of one cell—the terminal post and the grid connector.

5. OVERCHARGED. Lack of proper attention to the generator charging rate destroyed this cell. The active material has fallen away from the grid, plates are warped and separators are broken. Modern voltage regulators will do much to prevent this type of damage.

6. LACK OF WATER. This is what happens to the plates when the water supply is allowed to run low. Batteries should be checked weekly, and water sufficient to cover the tops of the cell plates should be added. Overheating, warping and final destruction result when the battery is allowed to run dry.





**"Passing out both Roosevelt and Willkie emblems have stepped up
our business 500%"**

AS far back as 1937, the first rayon cord tire appeared on the market. Since then it has grown in popularity, and today it is being used on hundreds of trucks and busses and is being offered as a premium price tire in the passenger car field.

Rayon is a product primarily of cotton, chemically treated and processed to form a single continuous filament. Hundreds of these fine filaments are twisted together to form the single rayon yarn corresponding to the single cotton yarn spun from many individual short cotton fibers. Then, a predetermined number of these single yarns are twisted together to form a ply yarn and a definite number of ply yarns are twisted to form the cord used in the tire.

Rayon yarn is uniform in gage throughout its length, and uniformly strong from end to end. When twisted into the cord used in the tire, the rayon cord shows a uniform twist, and a smaller gage. This is an important factor, since this permits laying more cords side by side per inch of width, resulting in a tire of greater strength; also, it permits a thinner carcass.

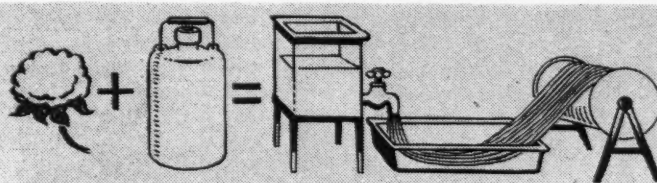
Heat is the number one problem in tires, particularly bus and truck tires, and rayon possesses some very favorable characteristics in this regard. Truck tires frequently reach temperatures of 200 to 250 deg. F. when running, and at these temperatures rayon loses comparatively little of its tensile strength.

One of the early difficulties in adapting rayon cord for use in tires was that of finding a means of making the smooth silky surface of rayon adhere to the rubber. This was solved by the development of a new bonding solution which permanently binds the rayon cords, rubber cushion and tread stock into an inseparable unit. Rayon is seriously effected by water, but in the case of tires where the cord is completely sealed in rubber, this

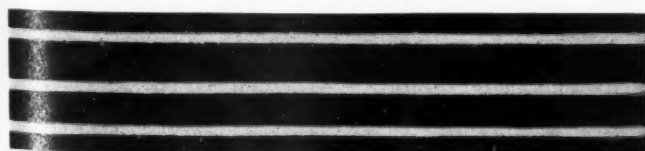
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RAYON IN Tires

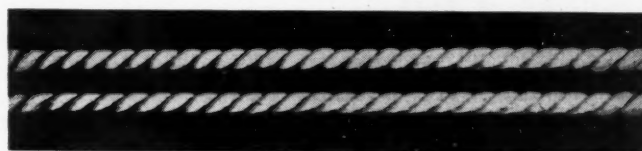
The use of rayon cord in truck and bus tires is becoming increasingly popular and the practice is spreading to the passenger car tire for deluxe equipment



1. **COTTON** — from which is extracted —
2. **CELLULOSE**, which when purified, is steeped in caustic soda to form —
3. **ALKALI CELLULOSE**, which when aged is mixed with carbon disulfide, forming an orange colored solid called —
4. **CELLULOSE XANTHATE**, which is dissolved in caustic soda to form a honey-like liquid called —
5. **VISCOSE**, which when properly mixed, aged and filtered is forced by pressure through a nozzle or spinneret, emerging into a bath of acid which solidifies the tiny sprays into —
6. **RAYON FILAMENTS** — The size of the rayon yarn and the number of filaments it contains are determined by the size and number of holes in the spinneret, the amount of solution forced through the holes per minute and the speed at which the filaments are drawn from the acid bath.



This view, enlarged several times, shows single strands of rayon yarn. Note its uniform gage, and smooth, even surface. On the right is an enlarged view of the rayon strands twisted to form the



tire cord. This further emphasizes the uniform gage of the cord after twisting, which permits laying more cords side by side per inch of width, resulting in a tire of increased strength.



OUNCES COUNT

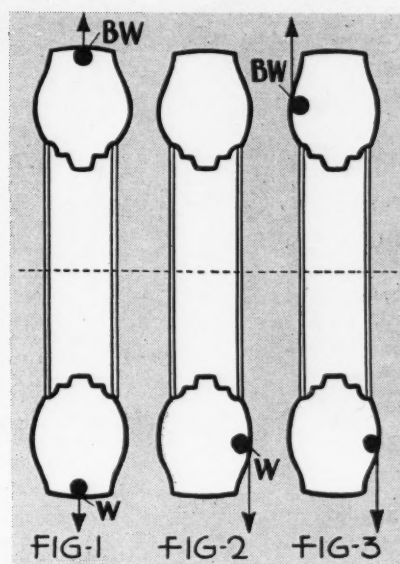
ONE ounce—a sixteenth of a pound—doesn't seem like a hell of a lot of weight to get excited about. But if it's on the rim of a wheel the effect of that one ounce increases with leaps and bounds as the speed of the wheel goes up.

Such a condition of unbalance causes the entire car to vibrate, it causes the wheels to bounce up and down and to swing from side to side. In addition to producing this dangerous condition it results in premature wear of tires, king pin, tie rod and drag link ends, and wheel bearings.

It's old man centrifugal force that causes all this trouble. If a wheel is in perfect balance, all portions of the wheel will exert an equal pull from the wheel center as it is revolved. But if the wheel is not in balance, things begin to happen. The section of the wheel or tire that is heavier will exert a stronger force; that is, it will have a greater tendency to move away from the wheel spindle or axle. This force increases with the speed of rotation.

With the wheel rotating the heavy portion of the wheel will tend to pull the car upward, then forward, then down and then back. That's pretty tough on the tires and springs.

To give an idea of the forces exerted, one ounce of unbalance at the rim of a 32 in. wheel exerts a force of 48 ounces or 3 lb. when the car is traveling at 30 m.p.h. Doubling the speed and the force increases to 12 lb. And at 90 m.p.h. it reaches a value of 27 lb. Imagine



what that does to the tires and steering mechanism.

How to compensate for an unbalanced condition will depend on its location. If the unbalance is located on the center line of the wheel it is easily and simply corrected by placing an equal weight at a point diametrically opposite to the unbalanced weight.

This added weight will then exactly balance the wheel. In other words, the forces set up by the unbalance will be neutralized or counteracted by equal forces set up by the added weight.

Having the unbalance located on the center line of the wheel is the simplest condition of unbalance and unfortunately seldom exists. The

more usual form is to have the unbalance to one side of the center line and when that condition exists the problem of neutralizing its effects becomes more complicated.

Of course, it is always possible to locate the heavy side of the wheel and add an equal weight to the opposite or light side, as shown in the illustration. When this is done the wheel will never come to rest in the same position and it is in static balance. Static, of course, is just a ten dollar word meaning "at rest" or without motion.

But when a wheel with the unbalance off the center line is balanced statically there will be a lot of trick forces set up as soon as it starts to rotate which will cause it to wobble or shimmy. Such a wheel has not been balanced dynamically, which is a fifteen dollar word meaning "in motion."

To get a better idea of what this is all about the wheel in Fig. 2 is out of balance because of the additional weight *W*. If the wheel is free to rotate, it will always come to rest with *W* at the bottom.

Now then, if we add a balancing weight *BW*, as shown in Fig. 3, the wheel will be in balance statically. In other words, there will be no tendency of the wheel to stop rotating in the same position.

But, and this is a big but,—the wheel is still out of balance dynamically. And here's why—

When a wheel is rotated, forces are set up (centrifugal force), which tend to pull each section of the wheel away from the axis of

(Continued on page 66)

By BILL TOBOLDT

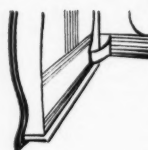
IN Wheel Balancing

An unbalanced wheel will cause plenty of trouble for the car owner. But for the shop that is prepared to do a good balancing job, there will be plenty of profit

A Serviceman's



LINCOLN-ZEPHYR

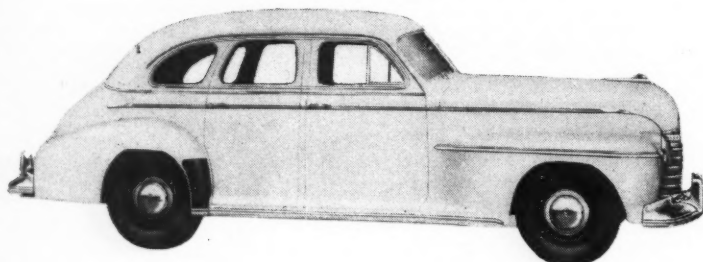
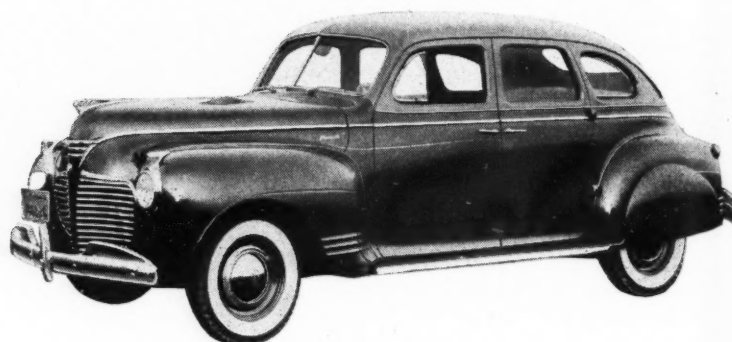


Three lines, Zephyr, Continental and Custom—Zephyr and Continental on 125 in. wheelbase, Custom on 138 in. wheelbase—V-12, 120 hp. engine with 7 to 1 compression ratio—unit body and frame construction—increased rear tread

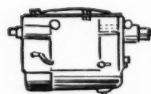
—improved riding through longer and softer springs—new interior trim—door windows and front seat of Custom operate automatically with electric hydraulic mechanism controlled by push buttons—optional equipment at extra cost includes automatic choke, transmission overdrive unit with automatic shift, two-speed axle with manual shift.

PLYMOUTH

Two lines, Plymouth and Plymouth Special DeLuxe, 117 in. wheelbase, 87 hp. engine—new heavy-duty engine bearings—increased engine performance—new transmission gear ratio—new rear axle ratio—vacuum gear shift optional—new wheel rim—metal spring covers standard—oil bath air cleaner—new front end styling—new body styling—wide-opening doors—new interior trim, featuring two-tone combination—new steering wheel—horn ring—improved riding comfort—improved body insulation—direction signals optional.



OLDSMOBILE

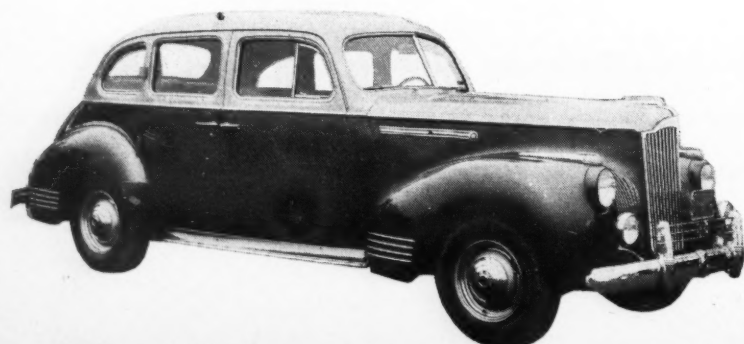
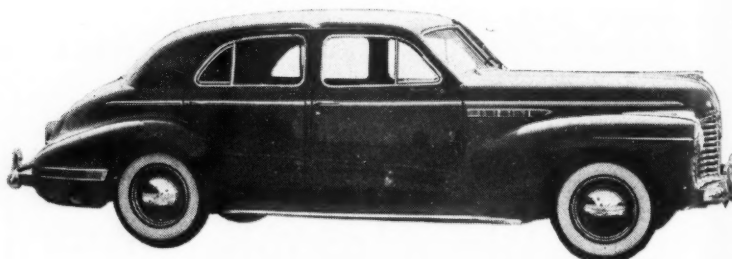


Special Series, 119 in. wheelbase—Dynamic Cruiser Series and Custom Cruiser Series, 125 in. wheelbase—6-cylinder, 100 hp. engine in all Series—8-cylinder, 110 hp. engine in all Series—new exhaust manifold—one-piece hood for

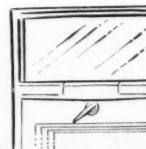
easier access to engine for service—increased rear tread—larger brakes—coil spring suspension at rear, knee action at front—new bumpers—new front end styling—new body styling—concealed running boards—Hydra-Matic transmission available at extra cost on all Series—improved body insulation.

BUICK

Series 40 and 50 on 121 in. wheelbase, Series 60 and 70 on 126 in. wheelbase, Series 90 on 139 in. wheelbase—Series 40 has 8-cylinder valve-in-head engine, 115 hp.—Series 50 has 8-cylinder valve-in-head engine, 125 hp.—Series 60, 70 and 90 have 8-cylinder valve-in-head engine, 165 hp.—compound dual carburetion on all except Series 40—improved fuel economy—new water pump—120 ampere hour battery—improved clutch operation—new front end styling—new body styling—concealed running boards—new one-piece hood.



PACKARD



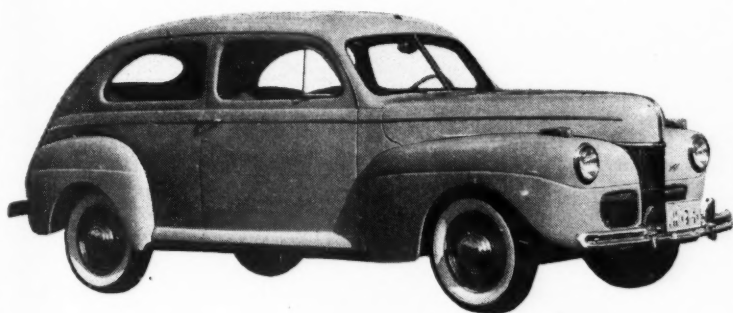
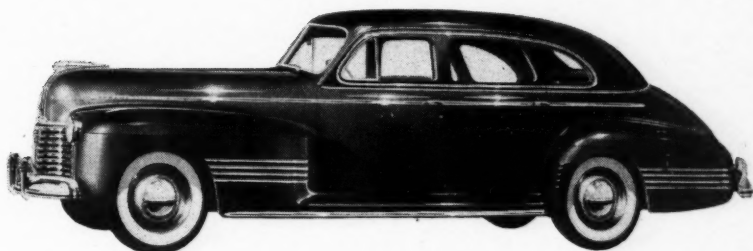
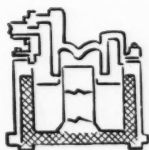
Series 110, 122 in. wheelbase, 6-cylinder 100 hp. engine—Series 120, 127 in. wheelbase, 8-cylinder 120 hp. engine—Series 160 Super-Eight and Series 180 Super-Eight Custom, on 127 in., 138 in. and 148 in. wheelbases, 8-cylinder 160

hp. engine—pressure cooling system—overdrive transmission optional—new body styling—with or without running boards—new interior trim—new instrument panel—power-operated windows on Series 180—improved gear shift mechanism—headlamps recessed in fenders—improved riding comfort—electromatic clutch special equipment.

View of The Cars of 1941

PONTIAC

DeLuxe Torpedo, 119 in. wheelbase, Streamliner Torpedo, 122 in. wheelbase, Custom Torpedo, 122 in. wheelbase—each model with either 6-cylinder 90 hp. engine, or 8-cylinder 103 hp. engine—improved engine performance—built-in engine oil filter—fan shroud for improved engine cooling—improved brakes with new brake drums—easier operating clutch—new front end styling—concealed running boards—Custom Torpedo models without running boards—increased rear tread—wider seats—new instrument panel—improved visibility.



FORD

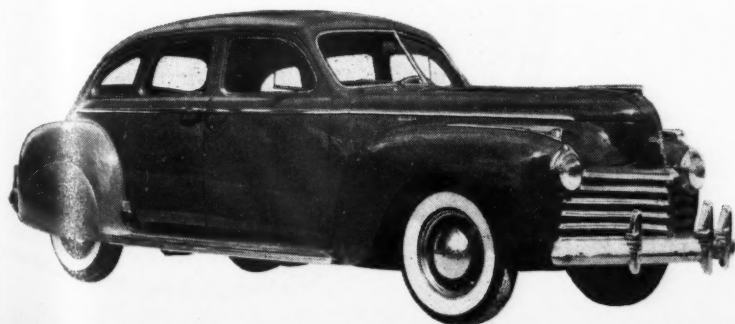


DeLuxe and Super DeLuxe—114 in. wheelbase—V-8, 85 hp. engine—camshaft gear bolted to camshaft—Ford-make carburetor—hardened valve stem—new frame, with torque tube passing through center section of X-member—new front and rear springs—new front shock absorbers—new front stabilizer bar—reduced clutch pedal pressure—faster acceleration in low and second gears—new method of body mounting to frame—new front end styling—multiple-section type front fender construction—improved windshield wiper action—new body styling.



CHEVROLET

Master DeLuxe and Special DeLuxe—116 in. wheelbase—90 hp. 6-cylinder valve-in-head engine—10 mm. spark plugs—increased capacity coil and condenser—polarity reversing switch—spark advance range increased—improved carburetion—rocker arms of new Armasteel, without shaft bushings—vacuum gear shift—improved clutch—easier shifting transmission—larger torque tube and drive shaft—rear tread increased to 60 in.—new front end and body styling—bodies longer, wider and lower—concealed running boards—rear door hinged on center pillar.



CHRYSLER

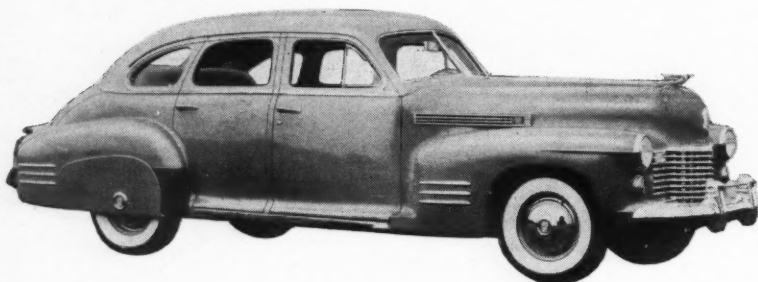


Royal and Windsor, 121½ in. wheelbase, 6-cylinder, 112 hp. engine—New Yorker, 127½ in. wheelbase, 8-cylinder, 137 hp. engine—Crown Imperial, 145½ in. wheelbase, 8-cylinder, 140 hp. engine—fluid drive standard equipment on all 8-cyl. models, optional on others—new body styling, wider, longer and lower—new frame—new type multiple-jet carburetor—"vacumatic" transmission with fluid drive equipment—improved clutch pedal operation—sway stabilizer on rear—new wheel rim—new interior trim—wider opening doors.

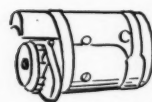
A Serviceman's View

MERCURY

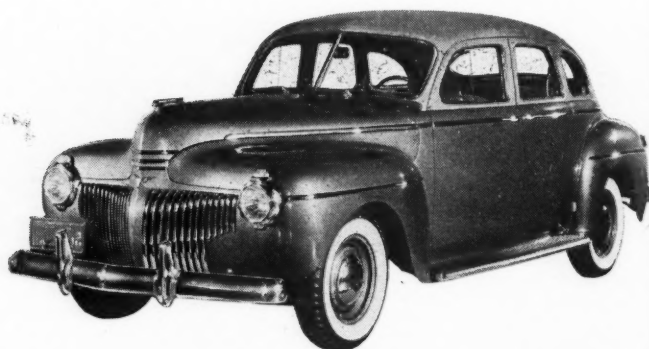
Six body types—118 in. wheelbase—V-8, 95 hp. engine—camshaft gear bolted to camshaft—hardened valve stems—improved windshield wiper operation—Ford-make carburetor—larger front shock absorbers—new frame—new front stabilizer bar—10 in. clutch—improved riding comfort through new front and rear springs—reduced clutch pedal pressure—multiple-section front fender construction—new front end styling—new body styling—new method of body mounting—improved engine performance.



CADILLAC

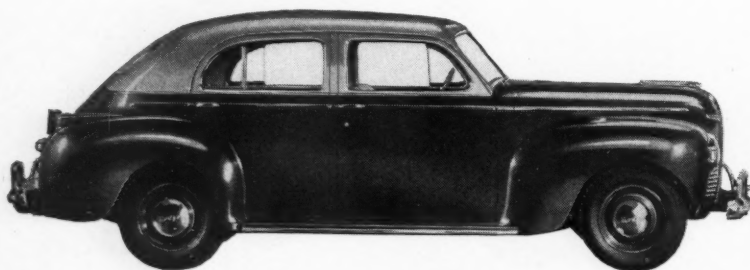
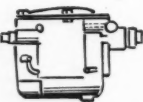


Series 41-61, 41-62, 41-63 and 41-60S on 126 in. wheelbase—new Series 67 on 139 in. wheelbase—Series 75 Cadillac Fleetwood on 136 in. wheelbase—all models use 150 hp. V-8 engine with 7.25 to 1 compression ratio—hydraulic valve lifters—alloy cast iron camshaft—improved clutch—recirculating ball type steering gear—new front end styling—new body styling—concealed running boards—concealed door hinges—directional signals—slotted disk steel wheels—provision for recessing fog lights in front fenders.



DE SOTO

DeLuxe and Custom Series on 121½ in. wheelbase, 6-cylinder, 105 hp. engine—new type main bearings—oil bath air cleaner standard equipment—battery located under the hood—standard transmission improved—gear shift lever has power shifter operation—fluid drive with new Simplimatic 4-speed transmission optional equipment—new wheel rim—increased tire size—new rear stabilizer bar—new front end and body styling—wider seats—new instrument panel—two-tone interior trim and hardware—new steering wheel—direction signals available.



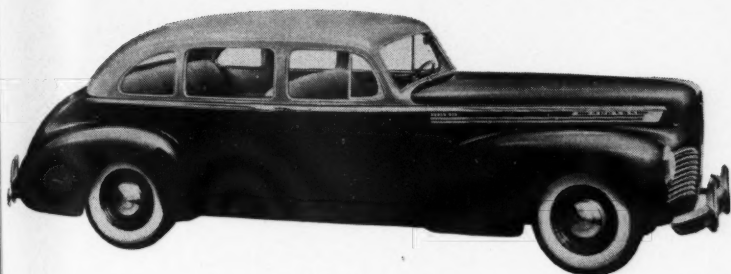
DODGE

DeLuxe and Special, 119½ in. wheelbase—6-cylinder, 91 h.p. engine—increased engine performance—oil-bath air cleaner—new gear shifting mechanism—fluid drive available—completely new body and front end styling—box-section frame—improved brakes with new brake master cylinder—rubber-insulated Pitman arm—new wheel rim—new interior door handles—hood lock operated from instrument panel—direction signals optional—rubber-insulated spring shackles—new instrument panel.



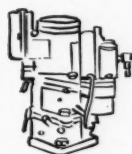
Longer, lower and wider — with advanced body and sheet metal styling—outstanding engineering achievements — and a host of mechanical refinements . . . the cars of 1941 step up and take a bow.

of the Cars of 1941 (cont.)



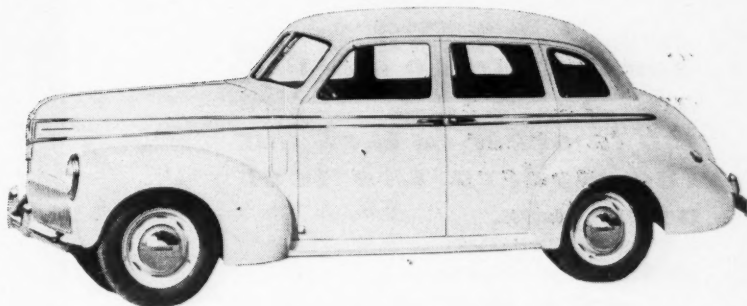
STUDEBAKER

Three lines, Champion, 110 in. wheelbase, 6-cylinder, 80 hp. engine—Commander, 119 in. wheelbase, 6-cylinder, 94 hp. engine—President, 124½ in. wheelbase, 8-cylinder, 117 hp. engine—Champion has new automatic choke—spring covers—without running boards—new front end and body styling—wider seats—concealed door hinges—new interior trim—new instrument panel—larger luggage compartment—improved performance and gasoline economy—two-tone exterior finish—provision made for installation of Climatizer.



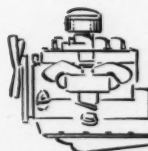
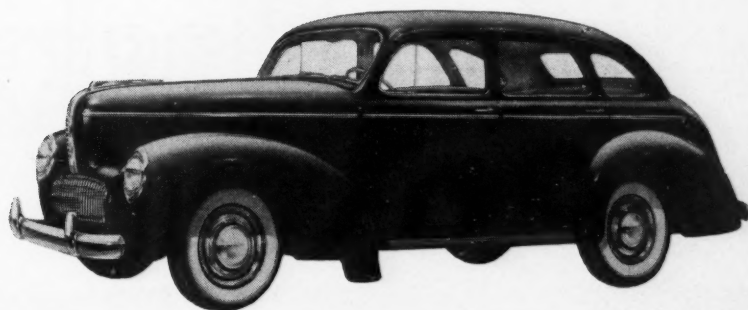
HUDSON

Three lines, Hudson Six, 116 in. wheelbase, 92 hp. engine—Hudson Super-Six, 121 in. wheelbase, 102 hp. engine—Hudson Commodore, 121 in. wheelbase and Custom model on 128 in. wheelbase, 8-cylinder, 128 hp. engine—new transmission—overdrive available—improved brakes with mechanical override—improved riding comfort through refinements in springing—easier clutch operation—new Champion spark plug—new front end and body styling—running boards optional—new interior trim in color combinations harmonizing with exterior finish—new instrument panel.



NASH

Ambassador 600, 112 in. wheelbase, 6-cylinder, 75 hp. engine—Ambassador Six, 121 in. wheelbase, 6-cylinder, 105 hp. engine—Ambassador Eight, 121 in. wheelbase, 8-cylinder, 115 hp. engine—new model, the Ambassador 600 features gasoline economy—body and frame integral—new type knee action construction—coil springs at rear—intake manifold cast in head—rifle-bored connecting rods—crankshaft and flywheel balanced as a unit—torpedo-type body styling—concealed running boards—torque tube drive—direct acting shock absorbers.



WILLYS

Sedan and Coupe body styles—104 in. wheelbase—4-cylinder 63 hp. engine—improved gasoline economy—improved performance—new X-type frame—increased rear tread—new hypoid rear axle—new transmission—remote control gear shift standard—Ross steering gear—8 in. Atwood-Thelander clutch—Hydra-Damper clutch plate—improved engine mounting—precision type rod bearings—improved riding comfort—new front end styling—new body styling—increased visibility—new instrument panel—remote control hood latch—new door lock striker.





You have to do a better and quicker masking job in order to turn out the modern two tone paint jobs.

Preparing the front of the car (right) for a two tone paint job. Note how the masking tape provides a sharp edge for spraying. Instead of paper some shops will apply a coat of masking compound up to the edge of the masking tape.



Paint Masking

SECRETS





1.

Bumpers, running boards and windows are covered with paper held in place by masking tape.

2.

Note how the masking tape will follow the contour of the fender providing a sharp smooth edge for spraying.

3.

Masking the lower body preparatory to spraying the upper portion.

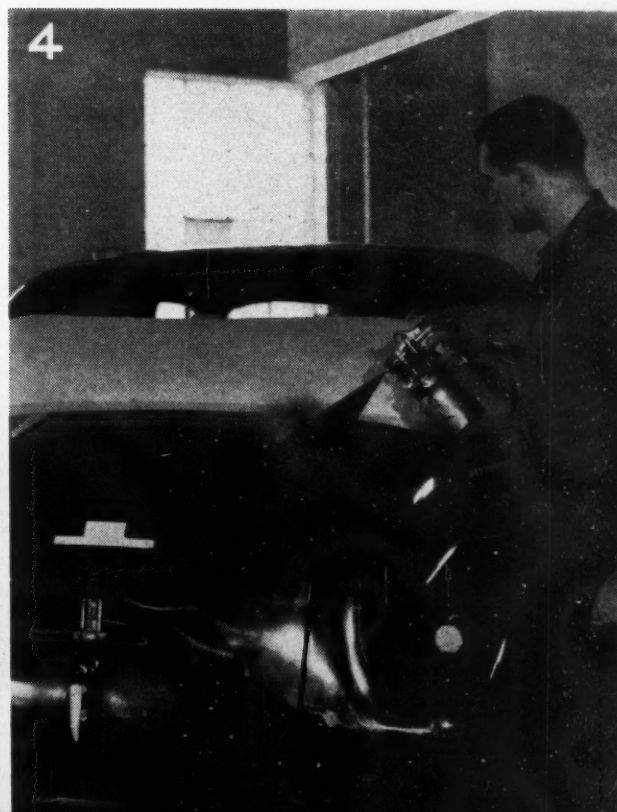
4.

Spraying the rear deck of a two tone coupe job. Note the tightly stretched paper held in place by masking tape over the rear windows.

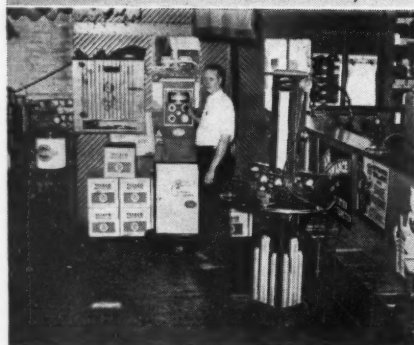
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3



4



MOTOR AGE

SHOP OF THE MONTH

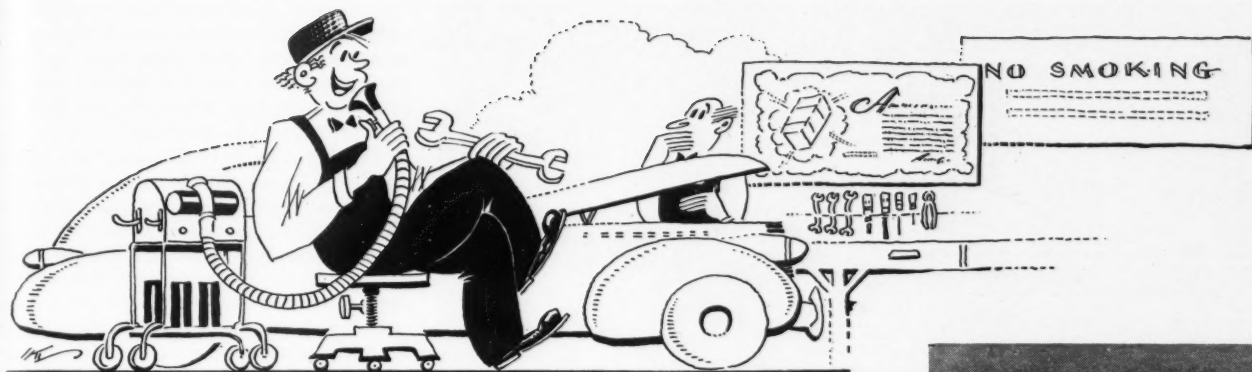
Servicing all makes of cars and keeping fifteen mechanics regularly employed, Lyons Garage and Tire Service occupies a three-story building in downtown Muncie, Ind. Samuel Lyons, operator (top of column), reports that his shop handles 500 orders monthly, earning a gross of \$10,000. Gasoline sales and lube jobs represent about \$500 a month. Lyons has \$4,000 invested in shop equipment distributed through several departments, typical of which is the Tune-up department (left).

"Buy with confidence—Ride with confidence," is the Anchor Garage Slogan. Reported to be Cincinnati's largest independent repair shop, Anchor Garage does a gross business of \$145,000 a year. With modern equipment, representing an investment of \$23,000, Anchor Garage handles somewhere in the neighborhood of 800 shop orders a month, according to A. H. Lenning, proprietor. Interior and exterior views are shown below. Lenning also operates a branch at Cheviot, O., suburb of Cincinnati.



Kneupper's of San Antonio, Tex. (right), was a blacksmith shop back in 1897 but today it's one of the largest independent garages in Southwest Texas. With a force of 12 regular mechanics (enlarged to as many as 35 in peak seasons) Kneupper's handles approximately 300 orders a month, earning a gross income of about \$36,000 a year. First garage in San Antonio to own a wrecker, Kneupper's began operating wrecker service back in 1916. Investment in shop equipment is \$8,000. No gasoline is sold.





THE READERS'

CLEARING HOUSE

of Servicemen's Queries



Bill Toboldt, Editor, Motor Age

FALLING OIL PRESSURE

Can you tell me what causes the oil pressure to drop in my 1935 Oldsmobile when pulling up hill?

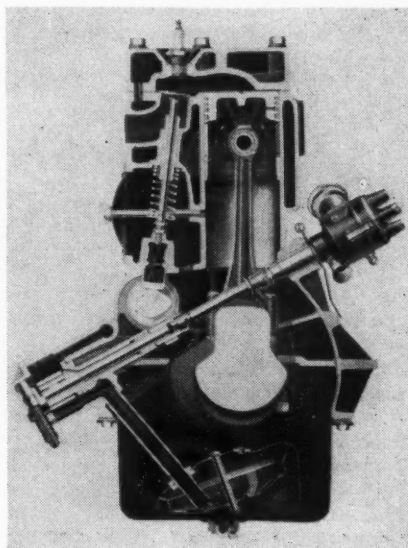
If the crankcase is absolutely full it will not do it, but when it gets between a pint and a quart low the oil pressure drops to zero when on a pull or going at a high speed in low or second gear.

The car was overhauled not long ago, so I don't think it can be caused from the screen being dirty.

Richmond, California, Subscriber

I AM inclined to believe that the oil is flowing away from the oil pump to such an extent that the pump is momentarily starved for oil. This condition sometimes results when the car is turned sharply to the right at relatively high speed. This causes the oil to flow away from the pump and the oil pressure drops to zero until the oil returns to the pump after the car has completed the turn.

The only way I know of that you can overcome this condition is to build a series of baffles in the oil pan so that the oil pump will be completely surrounded by the baffles and will have the effect of setting in a well of oil. Of course, you will have to leave openings at the bottom of these baffles in order to allow the oil to flow back into the well you have built. Otherwise, the pump would drain the



well and you would have the same effect as you would have if you ran out of oil completely.

ENGINE OVERHEATS

One of our customers has a 1935 Master Chevrolet which is always heating in either hot or cool weather. We have tried in vain to fix it but have had no results.

In our attempts, we have flushed the cooling system, installed a new radiator and water pump, checked the

ignition and fuel systems several times, and finally completely overhauled the motor, but it still boils even on short trips at a moderate rate of speed.

We have noticed several suggestion in the Readers' Clearing House about various motor troubles, and we will appreciate any information you can give us concerning this "hot" motor.

Albert Siebler, Siebler Service Garage, Loup City, Nebraska.

THE only point not mentioned in your letter, and one which might contribute to this condition, is the thermostat, which may be located either in the cylinder water outlet fitting or in the upper radiator hose, depending upon what has been done to this car in the way of heater installations or other changes.

My suggestion is that you test the thermostat in a bucket of hot water, noting the temperature at which it starts to open. You might also try driving the car with the thermostat removed to see whether the car still overheats.

Of course the problem of properly cleaning the rust and scale from the block as well as from the head would have to be given careful attention. We assume that you have cleaned this out to the best of your ability and if so, you should experience no difficulty from this angle. If the block and head were not properly cleaned there is a



"He had me fooled for years!"

possibility that the water circulation has removed some of this sediment and deposited it in the top tank of the new radiator. This would have to be checked to be sure the cooling system is free to circulate.

There is another point that may have a bearing on this condition, and that is that the suction created by the water circulation sometimes causes the water hoses to collapse. This can be guarded against by either installing a coiled spring inside the water hose or by making sure that the hose connections are new and are stiff enough to present collapse under suction.

UNUSUAL VIBRATION

We have been trying for 3 weeks to run down a noise or vibration in my 1936 Studebaker Dictator. It seems to be coming from under the floor boards in the region of the transmission.

This noise or vibration can be classed as a "shiver" when the car is being driven from a slow speed pick-up at about 15 m.p.h. up to 22 m.p.h. This condition just came in the car about 6 weeks ago, and the car has been driven 39,000 miles. It has always had the best of care, and has never been driven hard. The car is equipped with overdrive.

We first traced the noise to the clutch, but after exchanging both major units—the clutch and the flywheel—the noise was still there and could not be affected by depressing the clutch pedal.

Then we tore down and inspected

the transmission and overdrive unit, and put in \$54.00 worth of new parts, to no effect. And still thinking it was in the transmission we had a complete new unit installed, but still the vibration persisted.

We have also replaced the universal joints and drive shaft, put in new motor mountings, overhauled the vibration damper, installed a set of new main bearing inserts, examined the connecting rods and the crankshaft, put on a new muffler and tail pipe, took off the starter, took out the speedometer drive at the transmission, took the heater off the dash, tried to shift the motor in the frame, shimmed up the transmission in a dozen different places from the bell housing—but the noise is still there.

We have ridden by hanging on all over this car, and with the floorboards out we can locate the noise best by listening and holding to the transmission. We have driven the car with the fan belt off to eliminate the fan, generator and water pump; drilled the drive shaft and loaded it with heavy oil, but nothing we do seems to have any effect on this vibration. Please help us out if you can.—Roy E. Murphy, Kansas City, Mo.

JUDGING from your letter, you have been living with this job so long and have done so much to it in an effort to find the cause that you probably would not recognize the trouble now until it actually jumped up and bit you. This is sometimes the case when we work on a thing so long and

quite often it helps to bring in someone who knows nothing about the past history of the case, and let him have a crack at it. In this case, I hope I am the one who offers the suggestion that finally licks the job.

It seems to me that the first thing to do is to isolate the noise in one of the two major units of the car—in other words, either in the engine or in the running gear. My first step, therefore, would be to run the engine with the car standing still and with the clutch disengaged. Starting from an idle speed I would gradually increase the engine r.p.m. to see if this vibration period could be brought in. If it could, then I would know that the trouble was actually in the engine itself.

If the vibration period failed to appear I would next run the car up to the speed at which the vibration occurred and then cut off the engine and throw out the clutch to see if the noise still existed. If it did, then I would know that it was connected in some way with the running gear of the car or with the body panels. In other words, this would eliminate the engine.

If I found that the noise was confined to the engine and if I were sure that all the work you mentioned as having done was done correctly, I would first replace the crankshaft vibration damper. Even though you have already overhauled the old unit, I would rather trust a new one because it is quite possible that the trouble is caused by the damper not having a firm sea on the crankshaft. In other words, the vibration damper part of the unit might be functioning all right but the hub might not fit properly on the shaft so that, under certain conditions, it would set up a vibration. Then I would drive the car to see whether this had corrected the trouble. The next step, as far as the engine is concerned, would be to replace the complete distributor. It is possible that this condition can be traced to the distributor, either because of wear or because of improper breaker point alinement or gap. After the distributor replacement has been completed I would run the car again to observe the result.

The next thing I would do to the engine would be to carefully examine the flywheel to determine first if it was securely fastened to the crankshaft and second to determine if the flywheel was running true.

If it was found that the noise was not associated with the engine but with the running gear, I would first check the tire and wheel assemblies for being in balance. While the usual case of an unbalanced condition in tires or wheels becomes more severe as the speed increases, it is not unheard of for this vibration to come in and go out again at a certain speed. Therefore, I would be sure first that rear wheels, as well as front wheels, were properly balanced.

Next, I would look at the shock absorbers to be sure they are functioning properly and I would also check the springs to be sure that the spring clips were tight, that the shackles were in good condition and that the springs had not lost their set. I would next check the body panels because a vibrating panel will be a periodic vibration and one that is particularly difficult to locate. Included in the check of body panels would be also a check of floor panels.

As far as the clutch, transmission, universal joints and driveshaft are concerned, it certainly seems to me that you have done a pretty thorough job of checking these units. I would be particularly careful about the drive shaft because even such a little thing as a lubrication fitting on the side of the shaft is sometimes enough to set up a periodic vibration. And, of course, it is not beyond the realm of possibilities that the universal joints and the driveshaft you installed are slightly out of balance in themselves.

How Much Power?

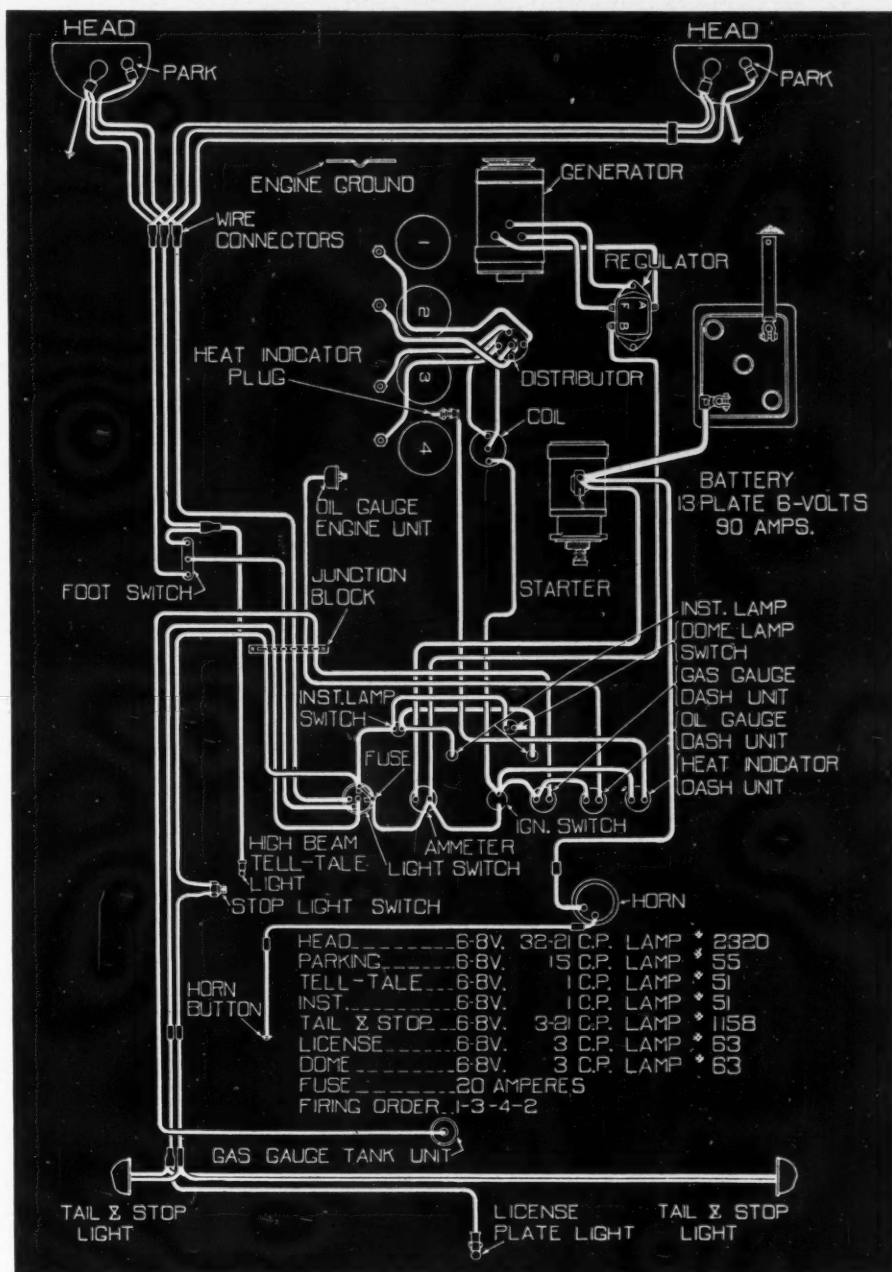
We have a Diamond T truck that has a Hercules JXE engine. It doesn't seem to have the power it should, and we think that the combustion chamber should go out over the piston farther. We been over the rest of the engine and it is in the best shape that it can possibly be made. Do you know where we can get a cylinder head made to order?—O. N. Kaiser, Hastings, Mich.

IT'S going to be a pretty expensive job for you to get a specially made cylinder head for that Hercules engine. I believe it would be better for you to first write the Hercules Motor Corp., 201 11th St., S. E., Canton, Ohio. It may be possible that they have a higher compression cylinder head to use on this engine and if so, that would be a lot cheaper than for you to have one made.

Your letter makes no mention of the mileage already delivered by this engine, and it may be that the lack of power is not due to the design of the cylinder head but rather to worn piston rings, cylinder walls or some other mechanical condition which has developed as the result of use. My first suggestion would be that you take a compression reading of each cylinder in an attempt to locate trouble of this nature rather than to assume that the trouble is caused by the head.

SETTING FLOAT LEVEL

In your April tune-up issue you say that the float level setting on the Ford carburetor is 11/16 in. with the engine running. Now the Ford 85 uses a Chandler Groves carburetor with the float mounted on the bowl cover, and it would be impossible to



Willys 440, 1940 Wiring Diagram

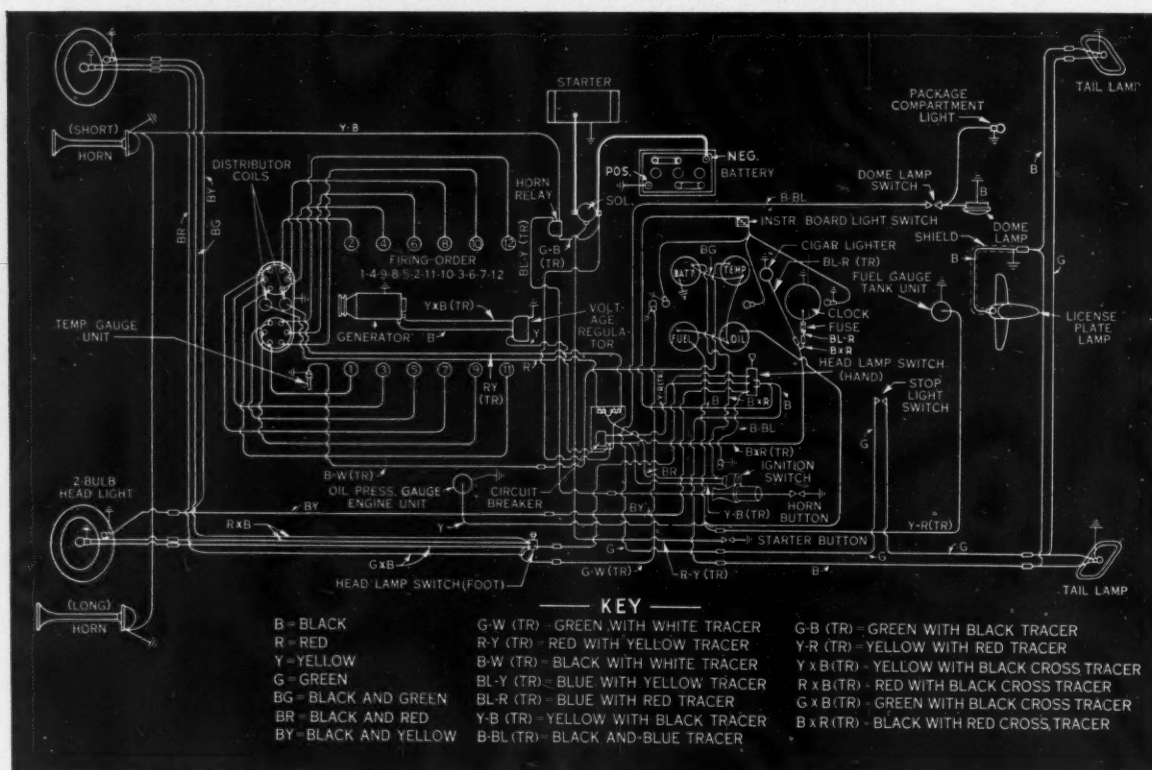
check the float level with the float and cover off. Could you let me know what the correct setting is, and how it is set?—Glenn R. McKim, Akron, Ohio.

THE specification of 11/16 in. is fuel level and not float level, and means that with the carburetor assembled and the engine running the level of the gasoline in the bowl should be 11/16 in. below the top edge of the bowl.

About the only way you can check this measurement is by the use of a float level gage. This gage consists of the proper fittings for connecting it to the bottom of the float chamber, and an upright glass tube. When connected, the gasoline in the tube will of course, represent the same

height as the gasoline in the bowl of the carburetor, and with this visual gage it is easy to check the distance from the top of the fuel level to the flange of the float chamber. If you do not have this type of gage it would be well for you to get one, because it is the most accurate method of checking fuel level.

Without the gage it is possible to arrive approximately at this figure by removing the bowl cover and turning it upside down. In this position the distance from the bottom of the float to the float cover flange should be between 1 3/8 in. and 1 11/32 in. With the float set to give the range between these dimensions, the fuel level in the bowl when the engine is running will be approximately correct.



Lincoln-Zephyr V-12 Wiring Diagram

BURNS RODS

We have been a subscriber of *MOTOR AGE* for six years and this is the first time we have had to call on you, but we need help now and need it bad. We have a 1937, 115-C Packard which has been driven 40,000 miles. The oil was left out through mistake and burned the connecting rod inserts. We checked the crankshaft and is seemed to be OK, so we replaced them. It ran about 200 miles then out again. Then we had the shaft reground, checked oil lines, main bearing, put in No. 10 oil. It had 30 lb pressure when motor was hot. It ran perfect for 200 miles then burned out again. Everything seems to be OK to us and that is why we are asking you for help. Any help you can give us on this job will be greatly appreciated. R. Glenn Ashburn, Willow Street Garage, Mt. Airy, N. C.

IN reference to the trouble you are having with the 115-C Packard, it would seem to me that some of the oil passages must be clogged, so that the rod and main bearings are not getting a full supply of oil. I think the thing for you to do is clean out all the passage-ways very thoroughly and then make an oil pressure test on the job, to make sure that all bearings are receiving an adequate supply of oil. If you don't have an oil pressure tester, you can probably borrow one from the jobber from whom you have purchased bearings.

In addition, I think you should check the oil pump to make sure that it is working and supplying plenty of oil.

I note that you say you have checked

the oil lines. However, I think you must have slipped up in making the check. The oil pressure test will show very definitely if everything is clear.

Another thing I would like to point out is that if one of your main bearings has excessive clearance, the oil leakage at that bearing will be so great that it will tend to starve the adjacent rod bearings; possibly this is your trouble if the oil lines are all clear. Here again, the oil pressure test will show definitely what your trouble is.

A PROBLEM IN MIXING

Will you please help us settle an argument by answering the following question: If I mix S.A.E. 30 oil and S.A.E. 10 oil in equal quantities, will this mixture give me an oil of the rating of S.A.E. 20? St. Louis Subscriber.

IT would be impossible to say just what S.A.E. number oil you would get without first knowing the exact Saybolt seconds of the grade of S.A.E. 30 and S.A.E. 10 oil you intended to mix. In other words, for an S.A.E. 30 oil to be rated as such it has to come within the range of 185-255 Saybolt seconds at a temperature of 130 degrees. In order for an oil to be rated as S.A.E. 10 it has to come within the range of 90-120 Saybolt seconds at 130 degrees.

You will readily see from this that if your S.A.E. 30 oil happened to be in the higher brackets, as for example 250 seconds, and the S.A.E. 10 oil also was in the higher brackets of say 120 seconds, the result of such a mixture might very well fall

within the low numbers of the brackets for the S.A.E. 30 oil. So is impossible to answer your question with either "yes" or "no" without knowing all the facts.

BATTERY RUNS DOWN

Can you tell me why the battery in a 1939 Ford 1½-ton truck goes down overnight. I have tested the battery, generator, regulator and wiring, but have been unable to find the cause. The ammeter shows no discharge, and a test shows that the generator puts out 33 amps. Have tried a new generator and regulator, but without success. Harold Rauer, Kilgore, Neb.

IT seems quite apparent that there is an electrical leak somewhere in the system, and the best way I know of to find this leak is to make a series of tests with a voltmeter starting at the battery. It will be necessary to check the entire circuit and particularly the horn wire. I have heard of cases in which a leak was detected in the horn wire and this leak was sufficient to drain the battery within a short time.

TRACTOR ENGINE MISS

We are having some trouble with a 1936 Model D John Deere tractor. The engine was overhauled by another shop, and since then it has developed a miss. The tractor has been back to the shop which did the overhaul job, and they have reground the valves, checked the manifold for cracks, replaced plug wires, installed a rebuilt magneto and then put on a new magneto, tried plugs of different makes

and heat ranges, and changed the carburetor jets.

Now we have the tractor in our shop, and we have reground the valves and checked and double checked everything the other shop did, and we can't find the trouble.

When starting the engine cold it will hit on both cylinders. It will run O. K. until hot, both without a load and also with a light load. But when a load is applied one cylinder will cut out, and it is usually the right hand one. Upon removing plugs we find that the missing cylinder has a wet plug. Exchanging plugs, the wet into the dry and the dry into the wet cylinder, will correct the trouble until the next heavy load is applied or sometimes it will change the miss from one cylinder to the other. Other times the tractor will run a full day without missing. Victor Yohanek, Kellnersville, Wis.

THE first thing I would do with this job would be to check the compression of each cylinder. Judging from your description, I am inclined to believe that this engine is pumping oil in spite of the fact that it has just had an overhaul job. I would certainly try to get a check on oil consumption as a further guide to the condition of the rings.

You might also try setting the spark plug gap a little closer in an effort to get away from this miss under a load.



"I don't like to bother you, but I'm just curious."

SHOP KINKS

Here's your chance to pick up a little cigarette money. We'll pay five bucks (\$5.00) for every Shop Kink accepted and printed. So send 'em in to us—some short cut you use in doing a job easier and quicker than the other fellow—some special tool you made when you couldn't buy one to do the job—and we'll do the rest. Here are some that were accepted this month:

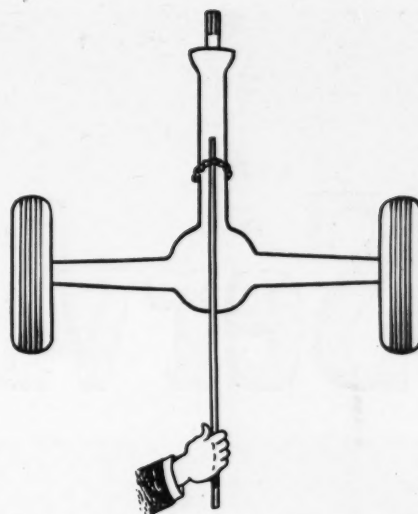
SQUEAKING WATER PUMP

Here's how I stop a squeak in a water pump when there is no lubrication fitting: run the engine until it is warm and then put 2 to 4 ounces of castor oil in the radiator. When this mixes with the cooling solution and circulates, it lubricates the pump and stops the squeak. It has been my experience that the squeak will stay out for months after this treatment. If the squeak returns, do the job again, and it is just as effective the second time.

INSTALLING THE

DRIVE SHAFT

It is quite a job for one man to enter the splines of the drive shaft into the rear of the universal joint

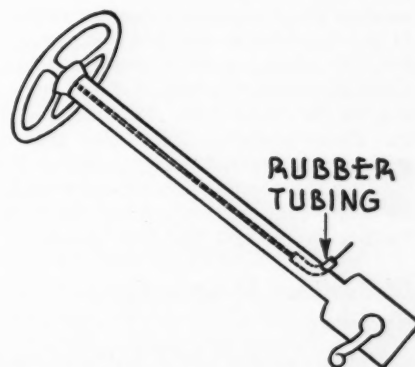


yoke of a torque tube job because he has to support the weight of the tube and at the same time enter the splines and pull the whole rear axle assembly forward.

If a light chain is looped around the torque tube ahead of the differential, and a 6 or 8-ft. bar entered through the loop, using the differential as a fulcrum a man can stand in the rear of the axle housing and by pressing down on the bar he can lift the front end of the torque tube and move it up or down, left or right, while the man under the car guides the propeller shaft into the universal joint. Then, a forward push on the rear axle housing to roll the assembly ahead, and the shaft will slide home in the universal joint.

FIXING A SHORT

I have a quick and effective repair method for a shorted horn wire on a Chevrolet car when the short is at



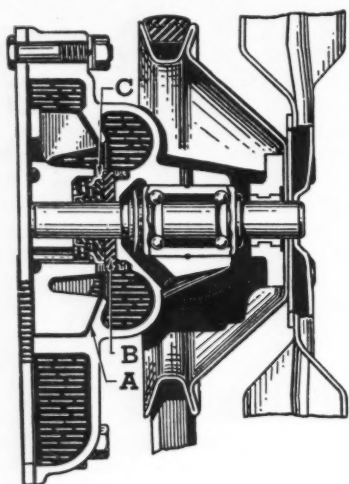
the hole where the wire leaves the steering column. Slip a 6-in. piece of small rubber hose over the wire and into the hole, leaving about half of it sticking out. Tape it in place to keep it from shifting.

This saves the job of removing the bushing and the wire from the steering column.

Service Hints from

Water Pump Instructions

To avoid breakage of the water pump body on the 1940 Packard models 110 and 120, it should be supported when pressing impeller off shaft. Installation will be facilitated by heating impeller in water just under boiling point and by coating shaft and



seal with engine oil. Machined face on pump body against which the washer rides must be smooth and flat. If scored, renew the body or resurface if adequate tools are available. Clearance between impeller and housing at "A" should be .012 in. to .074 in. Both gaskets should be coated with special gasket cement. When installing the composition thrust washer be sure that the smoother face of washer is nearest the fan blades.

Climatizer Heater Core Spacers

Should a gap exist between the climatizer core and the housing or shroud, cold air will pass the core and result in a cold draft and reduced efficiency of the climatizer used on Studebaker cars.

To check and correct this condition on cars in service, remove the front seat cushion and examine the climatizer from above. If a noticeable gap exists at the front or rear edges of the core, install spacers, Part No.

199303, at the front and at the rear of the core.

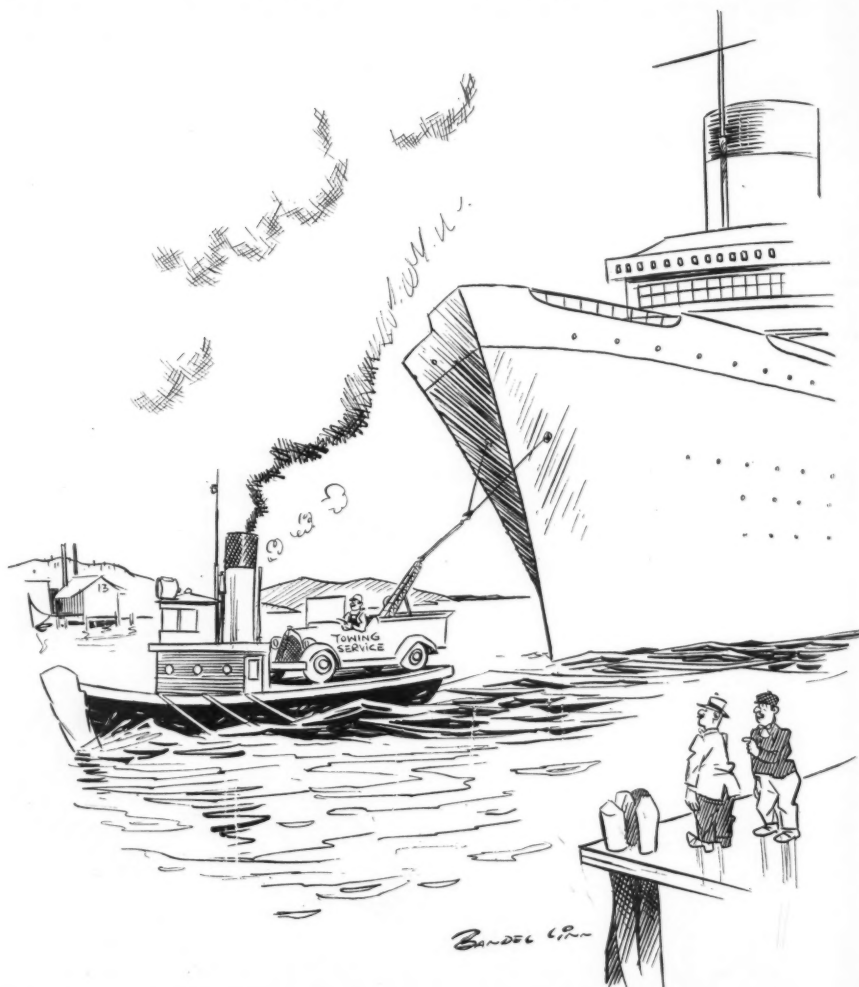
The spacers are installed from above by merely pushing them into place between the core and shroud with the flange edge of the spacers upward and toward the center of the core. The springiness of the spacers will hold them in place.

Change in Shaft and Drum

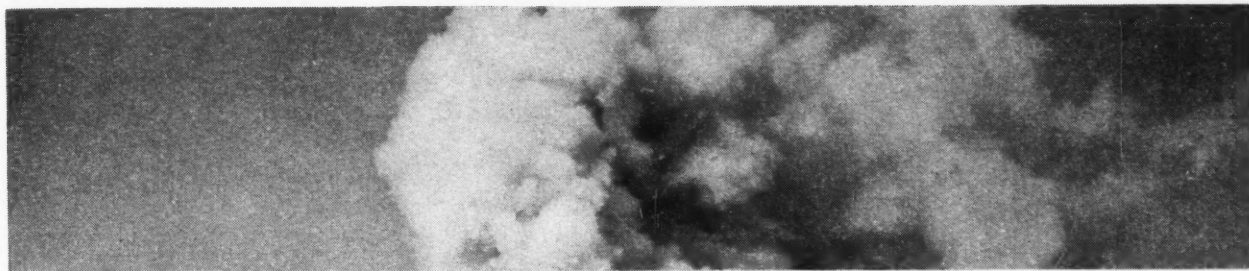
A change has been made in the design of the passenger, $\frac{1}{2}$ and $\frac{3}{4}$ -ton truck rear axle shaft and rear brake drums of the 1940 Chevrolet. The

method of attaching the rear brake drum to the axle shaft flange with two slotted-head screws has been discontinued. In place of this, each rear brake drum will be held to the axle shaft flange by means of two brake drum retaining nuts on the $\frac{7}{16}$ in. wheel bolts.

This will eliminate the two $\frac{5}{16}$ in. tapped holes in the axle shaft flange as well as the two $\frac{5}{16}$ in. slotted-head brake drum attaching screws and lock washers at each rear wheel. This change does not apply to the $\frac{3}{4}$ -ton special truck.



"Old Henderson stops at nothing!"

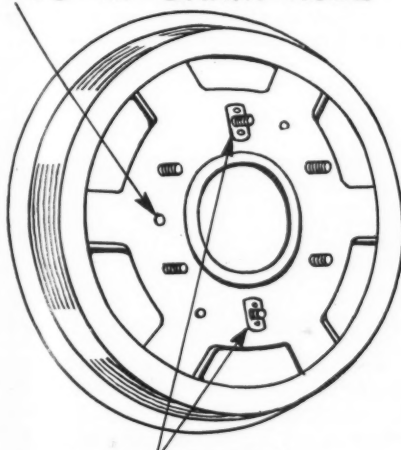


the FACTORIES



The new type brake drums have a tongue or lug in the web section extending inward into the drain hole to serve as a positive locating point to line the drum up with the drain hole in the axle shaft flange. This will

LUG AT DRAIN HOLE



BRAKE DRUM RETAINING NUTS

prevent any possibility of assembling the brake drum in the wrong position on the flange with relation to the drain holes.

The new type brake drum, with the tongue at the drain hole, may be used with either the old or the new type axle shaft, as the two 11/32 in. screw holes will remain in the drums; however, when used with the new shaft which does not have the 5/16 in. tapped holes in the flange, it will be necessary to use the two (part number 3656898) brake drum retaining nuts to hold the drum to the flange.

The new production axle shafts will not have the two 5/16 in. tapped holes in the flange; however, the shafts for service will have these two holes in order that they may be used on prior models as well.

Raising Steering Wheel

In the event that it is desired to raise the steering wheel to increase the space between the rim of the steering wheel and the seat cushion on the 1940 Plymouth, Chrysler has provided a unit parts package to do the job. It is known as the Steering

Column Bracket Package, and carries Part No. 891409.

The use of these parts raises the steering wheel one inch, measured between the floor and the rim of the wheel. It requires cutting a slot in the instrument panel to allow for clearance of the steering column gear shift rod, and it also requires drilling a hole in the frame to accommodate the new location of the steering gear housing.

Fast Idle Adjustment

The .010 in. gage specified for this adjustment on the Pontiac "8"—Carburetor 469S, may not be available, so the following alternate adjustment may be made:

With throttle stop screw backed out until throttle valves are completely closed, hold choke valve closed. With fast idle screw backed off until it clears the high point of fast idle cam, turn in the fast idle screw until there is a slight drag on the cam, then screw in 1/8 turn, which should open the throttle the prescribed amount of .010 in.

NEWS

41st N.Y. Show

The historic yet up-to-the-minute National Automobile Show opens in Grand Central Palace, New York City, on Columbus Day, Oct. 12, and continues through to Oct. 20. Alfred Reeves, veteran of many a national show, is once more, show manager. Ford products will be shown at the Grand Central Palace this year, together with all other car makes, and including many truck, equipment, parts and accessories manufacturers.

An interesting highlight of this year's show will be an Historic Car Exhibit displaying some of the now-famous oldtimers of the industry. Entrants in the Historic Car Exhibit will be awarded prizes determined by popular vote of visitors at the show.

Honor Industry's Pioneers

Five of the outstanding pioneers of the horseless carriage days, Ransom E. Olds, Lansing, Michigan; Charles B. King, Larchmont, New York; Walter C. Baker, Cleveland, Ohio; Julian Chase, Directing Editor of Chilton publications, Philadelphia, Pa., and Charles S. Henshaw, Boston, Mass., are to be cited for awards because of their significant contributions to the development of the motor car by the Automobile Old Timers.

This action was taken by the executive committee of the national organization composed of America's motor car pioneers, at a meeting last month, at its new headquarters in the

Hotel Roosevelt. It was voted to present citations to these distinguished pioneers at the second annual luncheon to be held at The Roosevelt on October 16. A committee on Research and Awards was appointed consisting of Arthur Lee Newton, President of the Glidden Buick Corp., Chairman, David M. Goodrich, Chairman of the Board, B. F. Goodrich Co., and John F. Plummer, formerly New York Manager, Locomobile Company and past President, Automobile Merchants Association, to complete the plans for the presentations, the first to be announced by the year-old organization.

It was decided to issue a special honorary classification for all members whose activities date back forty or more years, to be known as "Motordom's Golden Pioneers." The membership card for these classes to be gold in color and to indicate the year of entrance into the automobile's sphere. A number starting with "One" in each year to indicate the priority of membership in the Automobile Old Timers.

After Market Gains Shown

Gains in all the after market divisions for the month of July were indicated by manufacturers reporting their monthly business figures to Motor and Equipment Manufacturers Assn. The report, released last month, states that original equipment shipments for July showed their usual seasonal decline.

The Grand Index for all branches of the industry in July dropped to 126 per cent of the January, 1925, base as compared with 140 per cent for June and 110 per cent for July, 1939. Shipments to vehicle manufacturers for original equipment in July decreased to 101 per cent of the base, which compares with 139 per cent registered in June and 94 per cent for July last year.

Service parts shipments to wholesalers for July rose to 172 per cent of the base as compared to 165 per cent in June. In July, 1939, the index stood at 154 per cent. Accessories shipments to wholesalers in July increased, standing at 93 per cent of the base index, which compares with 86 per cent in June and 113 per cent in July,



SAILOR This driver has constructed a "sail-car" in Geneva, Switzerland, to help solve the problem brought about by the shortage of gasoline. His car really travels like the breeze.



TWO-TONE JOBS European style. Camouflaging in England by painting one side of the car to blend with town background, the other with country. In an air attack, the driver screens one side or the other.

1940 Automobile Shows

| | |
|-------------------|----------------|
| New York | Oct. 12-20 |
| Detroit | Oct. 12-19 |
| Los Angeles | Oct. 12-19 |
| Rochester | Oct. 12-19 |
| Baltimore | Oct. 19-26 |
| Buffalo | Oct. 19-26 |
| Newark | Oct. 19-26 |
| Pittsburgh | Oct. 19-26 |
| Washington, D. C. | Oct. 19-26 |
| Indianapolis | Oct. 19-26 |
| St. Louis | Oct. 20-26 |
| Milwaukee | Oct. 26-Nov. 2 |
| Chicago | Oct. 26-Nov. 3 |
| San Francisco | Oct. 26-Nov. 3 |
| Omaha | Oct. 29-Nov. 3 |

1939. Service equipment shipments to wholesalers in July advanced to 120 per cent of the base, which compares with 117 per cent in June and 97 per cent in July, 1939.

Mays Wins A.A.A. Racing Crown

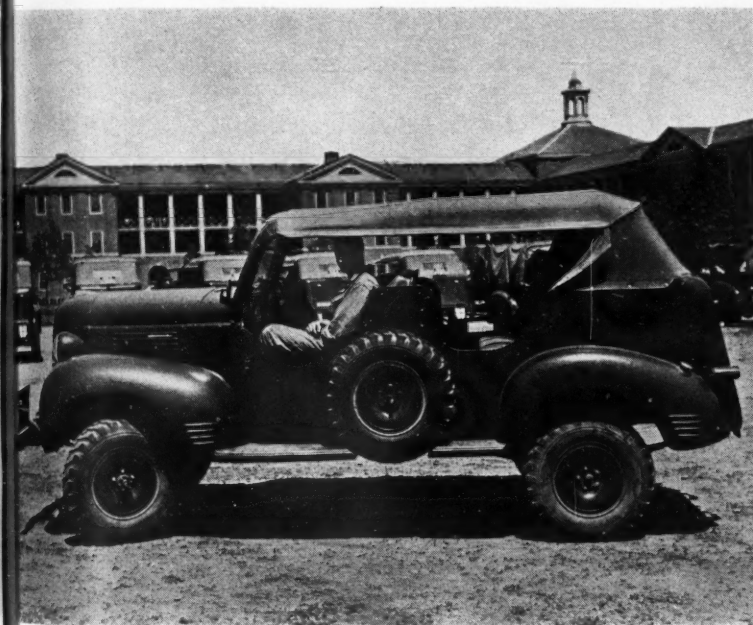
His victories on dirt tracks at Springfield, Ill., and at Syracuse, N. Y., together with his second-place achievement at Indianapolis on Memorial Day brought Rex Mays an undisputed A.A.A. National racing championship over Wilbur Shaw, Indianapolis winner.



WAR SCARCITY To keep its buses rolling in the face of gasoline shortage, a Copenhagen, Denmark, bus company has had its coaches re-equipped to transport the population of the German-occupied Danish capital by horse-on-the-hoof-power. Bus driver has been supplanted by the top-hatted gentleman.



TRAFFIC CONGESTION One alleged wit recently said that if all the trucks on our highways were lined up end to end—he'd be in back of them trying to drive to Atlantic City. Some day he'll come to this highway in California where all the steers in the Far West crowd this cattle crossing. Ewing Galloway photo.



NEW MODEL—ARMY STYLE In these days of defense preparations, the mechanization of armed forces, the calling of the national guard, the U. S. Army presents this trim new staff car for officers during maneuvers. This new model, built by Dodge, is cut down to insure speed—and has a convertible top.



DEAR SANTA CLAUS Lots of youngsters will be writing in a few months asking him to bring them one of these miniature gas-operated toy automobiles. It's a new toy introduced this year and from its use may develop some of the engineers and mechanics of the future. We hope Santa Claus is listening.

A Deal

Our South Carolina correspondent reports that one, Arthur Brown, of Walhalla, S. C., sold an automobile recently, the down payment on which included:

| | |
|-----------------------------|--------|
| Cash | .26 |
| Old Shoe (tire, we hope) .. | \$1.00 |
| One rooster | .74 |

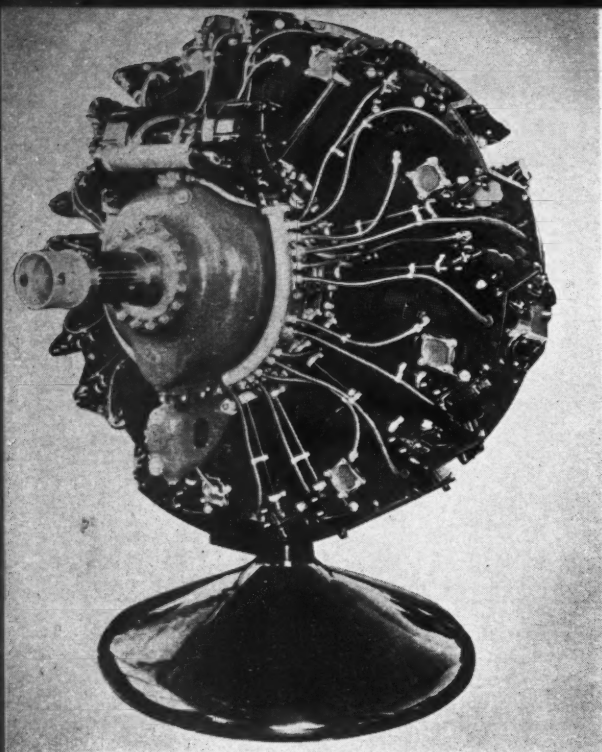
One new pair of trousers, a spotted dog and two overcoats were listed as security. Purchase price of the car was \$185. Believe it or not.

Chrysler to Build Tanks

Calling for the construction of an estimated 1000 25-ton tanks, a \$53,500,000 contract with the Chrysler Corp. has been cleared by the National Defense Advisory Commission for the War Department. The plant and equipment cost, included in the contract, is expected to be approximately \$20,000,000. The Chrysler Corp. will build and equip the plant. The plant will have a floor area of 800,000 sq. ft. and will be erected on a 113-acre site in the Detroit area. Title will be transferred to the Government. Production

is expected to begin at the end of one year.

Under the arrangements made with the company, the government-owned plant will be leased at a nominal rental fee of \$1 a year, operated and maintained by the company and used in the manufacture of tanks to be sold to the Government at a fixed price. The plan, described as unique because it eliminates such controversial tax questions as amortization on depreciation allowances, provides not only for the government compensation for the cost of the plant, but also for the payment of a four per cent commission.



Close-up of Uncle Sam's Strong Arm (left) Here's the world's most powerful air cooled aircraft engine. It's an eighteen-cylinder, 2,000 horsepower Wright Cyclone. The giant engine was developed by the Wright Aeronautical Corp. with the aid of U. S. Army Air Corps.

New Synthetic Rubber (below) Substantial increase in facilities for the manufacture of Chemigum, synthetic rubber, has been announced by P. W. Litchfield, board chairman of Goodyear Tire & Rubber Co. Shown in the picture are Dr. L. B. Sebrell (left) and Dr. R. P. Dinsmore (right) Goodyear research chemists, who developed the new chemical rubber. They hold a tire made with Chemigum.

Week-end Fire Fails to Halt Business (bottom of page) One recent week-end, fire broke out in the branch office of the Oliver Farm Equipment Sales Co. at Harrisburg, Pa., virtually destroying office and warehouse contents. Most of the branch records were stored in a fire-proof vault. R. L. Lee, branch manager, and his organization worked all night, found temporary headquarters, installed new telephone lines, moved records and equipment salvaged from the fire, printed stationery, addressed a letter to all Oliver dealers and by Monday morning were doing "business as usual" as though the \$200,000 fire had never occurred.

Taxes Set Speed Record 3,333 Dollars a Minute

Minute after minute, in daylight and darkness, throughout each twenty-four hour day America's motor vehicle owners are paying special taxes at the rate of \$4,799,520 a day, \$3,333 a minute, or \$55.55 a second, the American Petroleum Industries Committee estimates. These taxes include all federal, state, and local taxes paid by virtue of motor-vehicle ownership.

State and federal gasoline taxes are by far the heaviest of these special highway taxes, amounting to \$35.10 a second, or \$2,106 a minute. Registration and license fees are being paid at the rate of \$819 a minute; and Federal excise taxes, exclusive of the gasoline tax, amount to \$271 a minute. Miscellaneous other motor-vehicle taxes, tolls, and fees add another \$137 a minute.

Rogers Wins Pike's Peak Run

Al Rogers, Colorado Springs, won the Pike's Peak hill climb, Labor Day, by driving his Coniff Special over the 12 miles of twisting road to the 14,110-ft. summit in 15 min. and 56.9 sec.

Rogers' victory broke a four-year reign by Louis Unser, also of Colorado Springs. Unser was runner-up, four seconds slower than his perennial rival. Phil Shafer finished third in 17 min. and 2 sec.

Funeral Services From His Shop

Charles T. Barton, 59, Durand, Mich. garageman, died of a heart attack last month, and in fulfillment of a wish he had often expressed, was buried from his garage wherein he had labored since 1914. His was one of the oldest service establishments in the state of Michigan.



Cooling System

by

MAKES and MODELS

| AUBURN | Quarts | CHRYSLER (cont.) | Quarts | HUDSON (cont.) | Quarts | NASH (cont.) | Quarts | PONTIAC (cont.) | Quarts |
|-----------------------|--------|------------------------|--------|-----------------------|--------|-----------------------|--------|---------------------|--------|
| 120, 125, 1929, 1930 | 25 | C-15, 1937 | 21 | 95, 97, 1939 | 17½ | 4020, 1940 | 17½ | 6, 1936 | 15 |
| 8-98, 1931 | 21 | C-17, 1937 | 17 | 40, 41, 43, 1940 | 13 | 4080, 1940 | 18½ | 8, 1936 | 16¾ |
| 8, 1932, 1933 | 19 | C-18, 1938 | 20 | 44, 47, 1940 | 18 | 4140, 1941 | 14 | 6, 1937, 38, 39, 40 | 16 |
| 6-52, 1934, 1935 | 17½ | C-19, 1938 | 20 | 10, 11, 12, 1941 | 13 | 4160, 1941 | 17 | 8, 1937, 38, 39, 40 | 19 |
| 8-50, 1934, 1935 | 21 | C-20, 1938 | 20 | 14, 17, 1941 | 18 | 4180, 1941 | 16 | 6, 1941 | 18 |
| 12, 1932, 33, 34 | 37 | C-22, 1939 | 17 | HUPMOBILE | | OAKLAND | | 8, 1941 | 19½ |
| 6-654, 1936 | 16 | C-23, C-24, 1939 | 24 | S, S-2, 1930-31 | 14 | Six | 12 | REO | |
| 8-852, 1936 | 20 | C-25, 1940 | 18 | C, 1930, 1931 | 20 | 8, 1930, 1931 | 25 | 15, 1930 | 14 |
| AUSTIN | | C-26, C-27, 1940 | 24 | H, U, 1930, 1931 | 28 | OLDSMOBILE | | C Fly. Cloud, 20, | |
| 1931 to 1936 | 6 | C-28, 1941 | 18 | L, 1930, 1931 | 16 | 1929, 1930, 1931 | 13 | 25, 1929, 30 | 19 |
| BANTAM | | C-33, 1941 | 24 | 216, 1932 | 13 | 8, 1933, 1934 | 19 | 6-21, 6-25, 1931 | 17 |
| 1938 | 7 | C-30, 1941 | 24 | 222, 1932; 332, 1934 | 21 | F35, F36 | 13 | 8-21, 8-25, 1931, | |
| 1939 | 4 | DE SOTO | | 226, 1932; 326, 1933 | 24 | L35, L36, F37 | 16 | 1932 | 16 |
| 1940, 41 | 5½ | Six, 1931, 1932 | 15 | 321, 1933 | 21 | L37 | 20 | 8-31, 8-35, 1931 | 23 |
| BUICK | | Six, 1933 | 16 | 417, 1934; 421-J, | | F38, 60, 70, 1938-39 | 17 | S, 1932, 1933 | 20 |
| 8-50, 1930 to 1933 | 12 | Six, 1934 | 20 | 1934 | 16 | L38 | 21 | Royale, 1932, 33 | 23 |
| 8-60, 1930 to 1933 | 16 | Six, 1935 | 17 | 427, 1934 | 24 | 80, 1939 | 24 | S4, 1934 | 19 |
| 8-80, 8-90, 1930 | | Six, 1936 | 19 | 518, 1935 | 20 | 60, 70, 1940 | 17¾ | Fly. C., 1935, 1936 | 18 |
| to 1933 | 19 | S-3, 1937 | 20 | 321, 527, 1935 | 24 | Cruiser 8, 1940 | 21 | Roy., 1935 | 20 |
| 40, 1934 | 14 | S-5, 1938 | 20 | 6-618G, 1936 | 18 | 6, 1941 | 18 | STUDEBAKER | |
| 50, 1934, 1935 | 15½ | S-6, 1939 | 19 | 8-621N, 1936 | 21½ | 8, 1941 | 22 | Big 6, 1926, 27 | 19 |
| 60, 1934, 1935 | 18 | S-7, 1940 | 17 | 6, 1938, 39 | 18 | OVERLAND | | Dict., 1928 | 14 |
| 90, 1934, 1935 | 23 | S-8, 1941 | 18 | 8, 1938, 39 | 21½ | 1939 | 11¾ | Com., 1928 | 20 |
| 40, 1935 | 13 | ESSEX | | LAFAYETTE | | PACKARD | | Pres., 8, 1928 | 20 |
| 40, 1936, 37, 38, 39 | 13¾ | Six | 19 | 1934, 1935, 1936 | 19 | 903, 904, 1931 | 25 | Dict. 6 & 8, 1929 | 15 |
| 60, 80, 90, 1936 | | Super six, 1932 | 17 | LASALLE | | Lt. 8, 1932 | 19 | Com., 6, 1929 | 17 |
| 1937, 1938, 1939, 40 | 17 | DODGE | | 328, 1929 | 21 | Std. 8, 1932 | 20 | Com., 8, 1929, | |
| 40, 50, 1940 | 13¾ | Vict. 6, 1928 | 12 | 340, 1930; 345, 1931 | 24 | Del. 8, 1932 | 25 | 1930 | 14½ |
| 70, 1940 | 17 | Six, 1929, 1930 | 16 | 1932, 1938 | 26 | 12, 1932-36 | 40 | Pres., 1929, 1930, | |
| 40, 50, 1941 | 13 | 8, 1930 | 17½ | St. 8, 1934, 1935 | 18 | 8, 1933-36 | 20 | 1931 | 21 |
| 60, 70, 90, 1941 | 16¾ | Six, 1931, 32, 33 | 14½ | 8-36-50, 1936 | 16½ | Super 8, 1934, 35, 36 | 22 | Six, 1930, 31, 32 | 12½ |
| CADILLAC | | Eight, 1931, 32, 33 | 16 | 37-50, 37, 38, 39, 40 | 25 | 120, 1935 | 16½ | Dict. 8, 1930, 31 | 18 |
| 370, 1931 | 26 | Six, 1934 | 18½ | LINCOLN | | 120-B, 1936 | 18 | Com., 70, 1931 | 14 |
| 8, 1932, 33 | 26 | Six, 1935 | 17 | 8, 12, 1931 to 1933 | 34 | Six-115-C, 1937 | 17 | Dict., 62 | 14 |
| 12, 1932, 1933 | 24 | 6-D2, 1936 | 14 | 12-1934, 1935, 1936, | | 120-C, 1937 | 20 | Com., 71 | 16 |
| 16, 1932, 1933 | 28 | Six, 1937 | 16 | 1937, 1938 | 32 | 8-1500, 1, 2, 1937 | 24 | President 91 | 21 |
| 355-D, 1934, 1935 | 20 | Six, 1938, 39, 40 | 15 | V12, 1939-40 | 32½ | 12-1506, 7, 8, 1937 | 40 | Six 56, 1933 | 14 |
| 370-D, 1934, 1935 | 19 | D19, 1941 | 15 | LINCOLN ZEPHYR | | Six, 1938, 39 | 15 | Com., 1933 | 16 |
| 452-D, 1934, 1935 | 23 | FORD | | H, 1936, 1937 | 27 | 8-1601, 1701-2, | | Pres. 82, 1933 | 18 |
| V8-60, 1936 | 30 | V-8, 1932, 33, 34, 36 | 22 | 1938, 39 | 30 | 1938-39 | 16 | Pres. 92, 1933 | 23 |
| V8-70, 75, 1936 | 29 | V-8, 1935 | 20 | 1940, 41 | 27 | Sup. 8, 1938 | 20 | Dict. 6, 1934 | 15½ |
| V12-80, 85, 1936 | 19 | V-8-60, 37, 38, 39 | 15 | MARMON | | Twelve, 1938, 39 | 40 | Com. 8, Pres. 8 | 18½ |
| V16-90, 1936-37 | 24 | V-8-85, 37, 38, 39, | | 70, 1931 | 16 | 1703-5, 1939 | 22 | Dict. 6, 1935 | 16½ |
| V8-60, 65, 70 | | 40, 41 | 22 | 88, 1931; 8-128, 1932 | 28 | 1800, 1940 | 17 | Com., 1935 | 21½ |
| 75, 1937 | 25 | V-8-60, 1940 | 13 | 16, 1931, 1932 | 29 | 1801, 1940 | 18 | Pres., 1935 | 21½ |
| V12-85, 1937 | 17 | V-8-85, 1941 | 23¾ | 16, 1933 | 24 | 1803-4-5, 1940 | 20 | Dict., 1936 | 14 |
| V8-60, 60-S, 1938 | 24 | GRAHAM | | MARQUETTE | | 1806-7-8, 1940 | 20 | Pres., 1936 | 17 |
| V8-65, 75, 1938 | 25 | Cust. 8-34, 1931 | 26 | 1929 | 12 | 1900, 1941 | 15 | Dict., 1937 | 13 |
| 16-90, 1938, 39, 40 | 30 | 8, 1931 to 1934 | 20 | MERCURY | | 1901, 1941 | 17 | Pres., 1937 | 15½ |
| 60S, 62, 72, 75, 1940 | 24½ | 6-74, 1935 | 15 | 8, 1939, 40 | 22 | 1903, 4, 5, 6, 7, 8, | | Sta. Com., 1938 | 14½ |
| 60S, 61, 62, 63, 67, | | 6-73, 1935 | 17½ | 1941 | 23¾ | 1941 | 20 | Pres., 1938, 39, 40 | 17 |
| 75 1941 | 25 | 8-72, 1935 | 18 | NASH | | PIERCE-ARROW | | 9A, 10A, 1939, 40 | 14 |
| CHEVROLET | | 8-75, 1935 | 20 | Twin 8, 890, 990 | | 8, 1929 to 1934 | 26 | 2G Champ., 1940 | 10½ |
| 1929 to 1933 | 10 | 6-80, 1936 | 11 | Big 6, 1932 | 17 | 12, 1932, 1933, 1934 | 38 | 36, 1941 | 10½ |
| Std. 1934, 1935 | 10 | 6-90, SC-110, 1936 | 15 | Spe. 8, 1932 | 21 | 8-845, 1935 | 28 | 11A, 1941 | 13 |
| Master 1934, 1935 | 11 | 6-85, 1937 | 11 | Adv. Amb., 1932, | | 12-1245-55, 1935 | 40 | 7C, 1941 | 15 |
| Std. & Master, | | 6-95, SC-116, | | 1933 | 22 | 8-1601, 1936 & | | TERRAPLANE | |
| 1936 | 15 | SC-120, 1937 | 15 | 1120, 1933 | 19 | 8-1701, 1937 | 25 | Six, 1934 | 18 |
| Std. & Master, | | 6, 1938 | 13½ | Std. 1933, Spe., 1933 | 16 | 2-1602-03, 1936 | | Six, 1935 | 16 |
| 1937, 38, 39, 40, 41 | 14 | 96 Spec. & Cus., | | Big 6 1120, 1934 | 17½ | & 1702-3, 1937 | 38 | Six, 1936, 1937 | 13 |
| CHRYSLER | | 1939-40 | 14 | Adv. 8 1280, 1934 | 21 | PLYMOUTH | | VIKING | |
| Six, 1932, 33, 34 | 16 | 97 Superch. Cus., | | Amb. 8 1290, 1934 | 22 | Up to 1931 | 14 | 1929, 1930 | 33 |
| Roy. 8, 1933 | 19 | 1939-40 | 15 | 6, 1935, 1936 | 17½ | 1932 | 15 | WHIPPET | |
| Imp. 8, 1933 | 20 | HUDSON | | 400, 1935, 1936 | 18 | 1933 | 13 | 96A, 1930 | 11½ |
| Imp. Cust. 8, 1933 | 27 | 6-1935 | 18 | Adv. Amb., 1935 | 21 | 1934 | 14 | 98A, 1930 | 15½ |
| Roy. 8 CU, 1934 | 23 | 8-1935 | 23 | Amb. Super 8, 1936 | 21 | 1935 | 15 | WILLYS | |
| CV, CX, 1934 | 23 | 8-64, 65, 66, 67, 1936 | 20 | H, 1936, 1937 | 27 | 1935, 1936, 1937 | 15 | Eight | 20 |
| 6-C6, 1935 | 17 | 6-63, 1936; 6-73, | | Lafayette 400, | | 1938, 39, 40, 41 | 14 | 77, 1933-36 | 9 |
| 8-C2, 1935 | 20 | 1937 | 13 | 3710, 1937 | 20 | PONTIAC | | 1937, 1938, 39 | 11 |
| 8-C1, C2, C3, 1935 | 19 | 8-74, 75, 76, 77, 1937 | 20 | Amb. 6, 3720, 1937 | 17 | Up to 1928 | 10 | 1940, 1941 | 11½ |
| CW, 1935 | 24 | 112, 1938 | 12 | Amb. 8, 3780, 1937 | 18 | 1929, 1931, 1932 | 14 | WILLYS KNIGHT | |
| 6-C7, 1936 | 19 | Terra., 1938 | 12½ | Lafayette, 1938, | | 1930 | 13 | 70, 1926 to 1929 | 17 |
| 8-C8, 1936 | 22 | 6, 1938, 39 | 12½ | 39, 40 | 20 | 8, 1932 | 25 | 87, 1930 | 17 |
| 8-C9, C10, C11, 1936 | 17 | 8, 1938 | 17½ | Amb. 8, 1938 | 18 | 8, 1933, 1934 | 15 | 70A, 1928 | 16 |
| C-16, 1937 | 20 | 90, 98, 1939 | 12½ | 3920, 1939 | 16 | 6, 1935 | 13½ | 66D, 1931, 1932 | 17½ |
| C-14, 1937 | 22 | 93, 1939 | 12½ | 3980, 1939 | 17 | 8, 1935 | 14 | 95, 1931, 1932 | 15½ |

PROFIT MAKERS

PARTS • EQUIPMENT • TOOLS • ACCESSORIES

Tri-Zol Products

A new product known as Tri-Zol is being introduced by Interstate Sales Co., 1123 Broadway, New York City. Said to be made of 100 per cent degummed castor oil, the new product is being offered for three purposes: a penetrant, an upper cylinder lubricant and an oil-additive. The manufacturer claims that Tri-Zol has high vapor point, high metal absorption oiliness, and is non-corrosive to metals and non-injurious to human skin. For trial purposes a kit is provided, containing a 4-oz. can of Penetrant, 8-oz. of Gasoline Additive, and one pint of Oil Additive. The price of the complete kit is \$1.



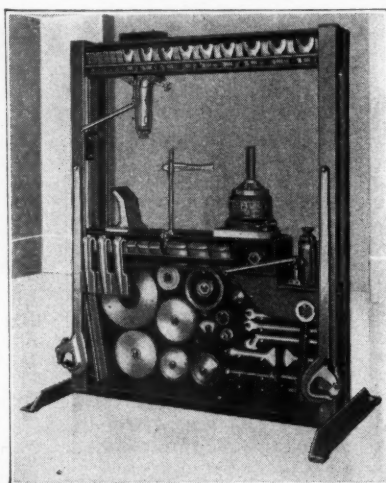
Extra Spark Plug Gasket



Realizing the trouble and inconvenience to miniature race car and gas model airplane builders caused by the loss of a spark plug gasket, and the difficulty of securing new gaskets, the manufacturers of Blue Crown miniature spark plugs—Motor Master Products Corp., 4757 Ravenswood Ave., Chicago, Ill.—now pack an extra gasket in each box, according to J. E. Menaugh Co., 549 Washington Blvd. Chicago, national sales representatives for the Motor Master Products Corp.

Bee-Line Wheel Straightener

A new model wheel, hub and brake drum straightener has been announced by the Bee-Line Company, Davenport, Iowa. The new model includes everything needed for straightening wheels, hubs, and brake drums quickly and accurately. It consists of a 20-ton press frame with a step bed design which provides dual operating height and maximum rigidity of the universal hub. Improvements have been made in the automatic centering hub, and accurate precision gages provide consistent accuracy to .001 in. Drop cen-



ter pressure tools and rocker jack base provide perfect stress reversal. Tools are complete in every detail. A 52-page manual is supplied with each outfit.

Foglite Extension Bracket



A new foglite extension bracket has been announced by the Do-Ray Lamp Co., 1458 S. Michigan Ave., Chicago, Ill. The purpose of the new bracket is to raise the foglite so that it will clear the high grill guards now common on many cars. Thus many installations can easily be made where they were heretofore impossible because of the short bracket on all standard fog lights. It can be used with any fog lamp having a ½ in. diameter mounting bolt.



"How long do you think he'll wait?"



The new tune-up banner by Lubaid Co., Milwaukee, Wis., is in four colors, 64 in. x 32 in. Banner is free with a Lubaid merchandise assortment.

Fittings Cabinet

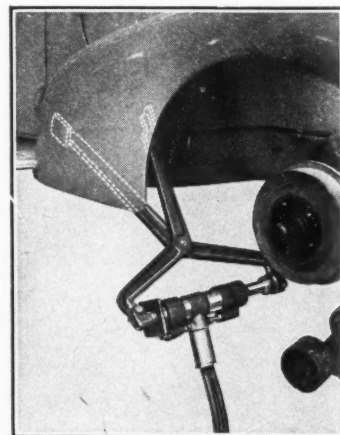
A compact, all-metal 80 compartment cabinet designed to help keep most-called-for fittings on hand and where they can be found without delay has been presented to the trade by



the Weatherhead Co., 300 E. 131st St., Cleveland, Ohio. The cabinet is given free in a special offer which enables the trade to buy 191 Weatherhead fittings for less than half price. Assortments include parts to repair any broken copper tube line in 3/16, ¼ or 5/16 in. sizes.

Fender Spreader

A new fender spreader which permits universal operation on all hydraulic body jacks with 1¼ in. pipe



fittings has been introduced by G. A. C. Mfg. Co., Ashland, Ohio. This spreader closes to 1¼ in., and opens to 19¼ in., with 6 in. ram travel. Designed for body and fender work.

Mechanical Specifications

These Specifications Are Brought Up-to-Date Each Month by the
Car Manufacturers and Supersede All Others Previously Published

| MAKE AND MODEL | Lowest priced 4-D. Sed. (Delvd.) | Wheelbase (In.) | Tire Size (In.) | No. of Cylinders, Bore and Stroke | ENGINE | | | | | | | | | | | | | | CHASSIS | | | | |
|----------------------------|-------------------------------------|-----------------|-----------------|--|-------------|----------------------------------|--|--------------------------|-----------------------|------------------------|-----------------------|-----------------|------------------|------------------|-----------------|--------------|------------------------|--------------|-------------------------|----------------------------------|----------------------------|-----------------|-------------------------|
| | | | | | Taxable Hp. | Piston Displacement (Cu. In.) | Maximum Brake Hp. at Specified R.P.M. | Compression Ratio (to-1) | Displacement Factor † | Cylinder Head Material | Cams/Shaft Drive Make | Piston Material | Oil Cleaner Make | Air Cleaner Make | Carburetor Make | Muffler Make | Electrical System Make | Battery Make | Clutch Type and Make | Universal Joint Type and Make | Rear Axle Type and Make | Rear Axle Ratio | Front Spring Suspension |
| Bantam.....65 | 449 | 75 | 4.00/15 | 4-2.26x3.12 | 8.2 | 50.14 | 22-3800 | 7.40 | ... | CI | Own | AI | None | AC | Z | Mc | AL | AL | P-Ro | UP | 1/2 Spi | 5.25 | Tr |
| Buick.....41-40 | | 121 | 6.50/16 | 8-3 1/2 x 4 1/2 | 30.6 | 248.0 | 115-3500 | 6.50 | ... | CI | LB | AI | AC | AC | S-C | Hay | DR | DR | P-Obl | Mp-S-S | 1/2 Own | 4.40 | IC |
| Buick.....41-50 | | 121 | 6.50/16 | 8-3 1/2 x 4 1/2 | 30.6 | 248.0 | 125-3800 | 7.00 | ... | CI | LB | AI | AC | AC | S-C | Hay | DR | DR | P-Obl | Mp-S-S | 1/2 Own | 4.10 | IC |
| Buick.....41-60 | | 126 | 7.00/15 | 8-3 1/2 x 4 1/2 | 37.8 | 320.2 | 165-3800 | 7.00 | ... | CI | LB | AI | AC | AC | S-C | Hay | DR | DR | P-Obl | Mp-S | 1/2 Own | 3.90 | IC |
| Buick.....41-70 | | 126 | 7.00/15 | 8-3 1/2 x 4 1/2 | 37.8 | 320.2 | 165-3800 | 7.00 | ... | CI | LB | AI | AC | AC | S-C | Hay | DR | DR | P-Obl | Mp-S | 1/2 Own | 3.90 | IC |
| Buick.....41-90 | | 139 | 7.50/16 | 8-3 1/2 x 4 1/2 | 37.8 | 320.2 | 165-3800 | 7.00 | ... | CI | LB | AI | AC | AC | S-C | Hay | DR | DR | P-Obl | Mp-S | 1/2 Own | 4.18 | IC |
| Cadillac V8...61,62,63,60S | 1445 | 126 | 7.00/15 | 8-3 1/2 x 4 1/2 | 39.2 | 346.0 | 150-3400 | 7.25 | ... | CI | LB | AI | None | AC | S-C | Wal | DR | DR | P-Long | Nb-Mec | 1/2 Own | 3.77 | IC |
| Cadillac V8...67, 75 | 2595 | 139-136 | 7.50/16 | 8-3 1/2 x 4 1/2 | 39.2 | 346.0 | 150-3400 | 7.25 | ... | CI | LB | AI | None | AC | S-C | Wal | DR | DR | P-Long | Nb-Mec | 1/2 Own | 4.27 | IC |
| Chevrolet Sp.DL & M.DL | | 116 | 6.00/16 | 6-3 1/2 x 3 3/4 | 29.4 | 216.5 | 90-... | 6.50 | ... | CI | Dia | CI | None | AC | Car | Var | DR | DR | P-Own | Nb-Own | 1/2 Own | 4.11 | IC |
| Chrysler...C-28W, C-28S | 1051 | 121 1/2 | 6.25/16 | 6-3 1/2 x 4 1/2 | 27.3 | 241.5 | 112-3600 | 6.80 | ... | CI | Mor | AI | Pur | AC | Car | ... | AL | Wii | P-B&B | rb | 1/2 | (b) | IC |
| Chrysler...C-30N, C-30K | 1278 | 127 1/2 | 7.00/15 | 8-3 1/2 x 4 1/2 | 33.8 | 323.5 | 137-3400 | 6.80 | ... | CI | Whit | AI | Pur | AC | Str | ... | AL | Wii | P-B&B | rb | 1/2 | (o) | IC |
| Chrysler...C-33 | | 145 1/2 | 7.50/15 | 8-3 1/2 x 4 1/2 | 33.8 | 323.5 | 140-3400 | 6.80 | ... | AI | Whit | AI | Pur | AC | Str | ... | AL | Wii | P-B&B | rb | 1/2 | | 4.55 IC |
| Crosley.....CB-41 | 366 | 80 | 4.25/12 | 2-3x2 1/2 | 7.2 | 35.3 | 12-4000 | 5.60 | ... | CI | Wau | CI | None | AC | Til | Own | AL | AL | P-Ro | Mp-S | 1/2 Spi | 5.14 | C |
| De Soto-DeL. & Cust..S-8 | 995 | 121 1/2 | 6.25/16 | 6-3 1/2 x 4 1/2 | 27.3 | 228.1 | 105-3600 | 6.80 | ... | CI* | Mor | AI | Pur | AC | Car | ... | AL | Wii | P-B&B | rb | 1/2 | | 4.10 IC |
| Dodge-DeL. & Cust..D-19 | 920 | 119 1/2 | 6.00/16 | 6-3 1/2 x 4 1/2 | 25.3 | 217.8 | 91-3800 | 6.50 | ... | CI | Mor | AI | Pur | AC | Str | ... | AL | AL | P-B&B | bt | 1/2 | | 4.30 IC |
| Ford-DeL. & Sup. DeL. 85 | 775 1/2 | 114 | 6.00/16 | 6-3.062x3.75 | 30.0 | 221.0 | 85-3800 | 6.15 | ... | CI | Dia | CS | ... | ... | Own | Own | Own | Own | P-Long | Own | 1/4 Own | 3.78 | Tr |
| Hudson-DeL. & Tr. 6...10 | | 116 | (d) | 6-3x4 1/2 | 21.6 | 175.0 | 92-4000 | 7.25 | ... | CI | Dia | AI | None | AC | Car | Old | AL | Na | P-Own | Nb-S | 1/2 Own | 4.55 | IC |
| Hud.-Sup. & Com. 6...11,12 | | 121 | (f) | 6-3x5 | 21.6 | 212.0 | 102-4000 | 6.50 | ... | CI | Dia | AI | None | Un | Car | Old | AL | Na | P-Own | Nb-S | 1/2 Own | 4.11 | IC |
| Hudson-Comm. 8...14 | | 121 | 6.25/16 | 8-3x4 1/2 | 28.8 | 254.0 | 128-4200 | 6.50 | ... | CI | Dia | AI | None | Un | Car | Old | AL | Na | P-Own | Nb-S | 1/2 Own | 4.11 | IC |
| Hudson-Comm. Cus. 8...17 | | 128 | 6.50/16 | 8-3x4 1/2 | 28.8 | 254.0 | 128-4200 | 6.50 | ... | CI | Dia | AI | None | Un | Car | Old | AL | Na | P-Own | Nb-S | 1/2 Own | 4.11 | IC |
| Lincoln-Zeph. & Cont. V-12 | | 125 | 7.00/16 | 12-2.875x3.75 | 39.6 | 292.0 | 120-3500 | 7.00 | ... | CI | Dia | CS | ... | ... | Own | Own | Own | Own | P-Long | Own | 1/4 Own | 4.44 | Tr |
| Lincoln-Custom...V-12 | | 138 | 7.00/16 | 12-2.875x3.75 | 39.6 | 292.0 | 120-3500 | 7.00 | ... | CI | Dia | CS | ... | ... | Own | Own | Own | Own | P-Long | Own | 1/4 Own | 4.44 | Tr |
| Mercury.....95 | 960 1/2 | 118 | 6.50/16 | 8-3.187x3.75 | 32.5 | 239.0 | 95-3600 | 6.15 | ... | CI | Dia | CS | ... | ... | Own | Own | Own | Own | P-Long | Own | 1/4 Own | 3.54 | Tr |
| Nash-Amb. 600.....4140 | | 112 | 5.50/16 | 6-3 1/2 x 3 3/4 | 23.4 | 172.6 | 75-3600 | 6.70 | ... | CI | Whit | AI | None | AC | Car | Wal | DR | AL | P-B&B | m-Mec | 1/4 Own | 4.11 | IC |
| Nash-Amb. 6.....4160 | | 121 | 6.25/16 | 6-3 1/2 x 4 1/2 | 27.3 | 234.8 | 105-3400 | 6.30 | ... | CI | Whit | AI | Pur | AC | Car | Wal | AL | AL | P-B&B | m-Mec | 1/4 Own | 4.10 | IC |
| Nash-Amb. 8.....4180 | | 121 | 6.50/16 | 8-3 1/2 x 4 1/2 | 31.2 | 260.8 | 115-3400 | 6.30 | ... | CI | Own | AI | Pur | AC | Car | Wal | AL | AL | P-B&B | m-Mec | 1/4 Own | 4.10 | IC |
| Oldsmobile...Special 6 | 945 | 119 | 6.00/16 | 6-3 1/2 x 4 1/2 | 29.4 | 238.0 | 100-3300 | 6.20 | ... | CI | LB | AI | None | AC | Car | Hay | DR | DR | P-B&B | m-Mec | 1/4 Own | 1.10 | IC |
| Oldsmobile...Dynamic 6 | 1010 | 125 | 6.50/16 | 6-3 1/2 x 4 1/2 | 29.4 | 238.0 | 100-3300 | 6.20 | ... | CI | LB | AI | None | AC | Car | Hay | DR | DR | P-B&B | m-Mec | 1/4 Own | 1.30 | IC |
| Oldsmobile...Custom 6 | 1099 | 125 | 7.00/15 | 6-3 1/2 x 4 1/2 | 29.4 | 238.0 | 100-3300 | 6.20 | ... | CI | LB | AI | None | AC | Car | Hay | DR | DR | P-B&B | m-Mec | 1/4 Own | 1.30 | IC |
| Oldsmobile...Special 8 | 987 | 119 | 6.00/16 | 8-3 1/2 x 3 3/4 | 33.8 | 257.0 | 110-3500 | 6.30 | ... | CI | LB | AI | None | AC | Car | Hay | DR | DR | P-B&B | m-Mec | 1/4 Own | 1.10 | IC |
| Oldsmobile...Dynamic 8 | 1045 | 125 | 6.50/16 | 8-3 1/2 x 3 3/4 | 33.8 | 257.0 | 110-3500 | 6.30 | ... | CI | LB | AI | None | AC | Car | Hay | DR | DR | P-B&B | m-Mec | 1/4 Own | 1.30 | IC |
| Oldsmobile...Custom 8 | 1135 | 125 | 7.00/15 | 8-3 1/2 x 3 3/4 | 33.8 | 257.0 | 110-3500 | 6.30 | ... | CI | LB | AI | None | AC | Car | Hay | DR | DR | P-B&B | m-Mec | 1/4 Own | 1.30 | IC |
| Packard-110.....1900 | 1056 | 122 | 6.50/15 | 6-3 1/2 x 4 1/2 | 29.4 | 245.0 | 100-3600 | 6.39 | ... | CI | Mor | Als | ... | AC | Str | ... | A-D | ... | P-Long | UP | 1/4 Own | 4.30 | IC |
| Packard-120.....1901 | 1261 | 127 | 7.00/15 | 8-3 1/2 x 4 1/2 | 33.8 | 282.0 | 120-3600 | 6.41 | ... | CI | Mor | Als | ... | AC | Car | Wal | AL | AL | P-Long | rb-Mec | 1/4 Own | 4.09 | IC |
| Packard-160...1903, 4, 5 | 1750 | 127-38-48 | 7.00/16 | 8-3 1/2 x 4 1/2 | 39.2 | 356.0 | 160-3600 | 6.45 | ... | CI | Mor | Als | Pur | AC | Str | ... | AL | AL | P-Long | rb-Mec | 1/4 Own | (g) | IC |
| Packard-190...1906, 7, 8 | 2587 | 127-38-48 | 7.00/16 | 8-3 1/2 x 4 1/2 | 39.2 | 356.0 | 160-3600 | 6.45 | ... | CI | Mor | Als | Pur | AC | Str | ... | AL | AL | P-Long | rb-Mec | 1/4 Own | (g) | IC |
| Plymouth.....P-11 | 780 | 117 | 6.00/16 | 6-3 1/2 x 4 1/2 | 23.4 | 201.3 | 87-3800 | 6.70 | ... | CI | Mor | AI | Pur | AC | Car | ... | AL | AL | P-B&B | bt | 1/4 Own | 4.10 | IC |
| Plymouth-Spec. DeL.P-12 | 840 | 117 | 6.00/16 | 6-3 1/2 x 4 1/2 | 23.4 | 201.3 | 87-3800 | 6.70 | ... | CI | Mor | AI | Pur | AC | Car | ... | AL | AL | P-B&B | bt | 1/4 Own | 4.30 | IC |
| Pontiac-DeL. 6...41-25 | 921 | 119 | 6.00/16 | 6-3 1/2 x 4 | 30.4 | 239.2 | 90-3200 | 6.50 | ... | CI | Mor | CN | None | AC | Car | Var | DR | DR | P-Inl | rb-SM | 1/4 Own | 4.10 | IC |
| Pontiac-Stream. 6...41-26 | 980 | 122 | 6.50/16 | 6-3 1/2 x 4 | 30.4 | 239.2 | 90-3200 | 6.50 | ... | CI | Mor | CN | None | AC | Car | Var | DR | DR | P-Inl | rb-SM | 1/4 Own | 4.30 | IC |
| Pontiac-Custom 6...41-24 | | 122 | 6.50/16 | 6-3 1/2 x 4 | 30.4 | 239.2 | 90-3200 | 6.50 | ... | CI | Mor | CN | None | AC | Car | Var | DR | DR | P-Inl | rb-SM | 1/4 Own | 4.30 | IC |
| Pontiac-DeL. 8...41-27 | 946 | 119 | 6.00/16 | 8-3 1/2 x 3 3/4 | 33.8 | 248.9 | 103-3500 | 6.50 | ... | CI | Mor | CN | None | AC | Car | Var | DR | DR | P-Inl | rb-SM | 1/4 Own | 4.10 | IC |
| Pontiac-Stream. 8...41-28 | 1005 | 122 | 6.50/16 | 8-3 1/2 x 3 3/4 | 33.8 | 248.9 | 103-3500 | 6.50 | ... | CI | Mor | CN | None | AC | Car | Var | DR | DR | P-Inl | rb-SM | 1/4 Own | 4.30 | IC |
| Pontiac-Custom 8...41-29 | 1077 | 122 | 6.50/16 | 8-3 1/2 x 3 3/4 | 33.8 | 248.9 | 103-3500 | 6.50 | ... | CI | Mor | CN | None | AC | Car | Var | DR | DR | P-Inl | rb-SM | 1/4 Own | 4.30 | IC |
| Studebaker-Champ. 6...3G | 770 | 110 | 5.50/16 | 6-3x4 | 21.6 | 169.6 | 80-4000 | 6.50 | ... | CI | Dia | AI | None | AC | Car | Wal | AL | Wii | P-B&B | Mp-S | 1/4 Spi | 4.56 | IT |
| Studebaker-Com. 6...11A | 985 | 119 | 6.25/16 | 6-3 1/2 x 4 1/2 | 26.3 | 226.2 | 94-3600 | 6.50 | ... | CI | Dia | AI | Fram | AC | Str | Wal | AL | Wii | P-B&B | Mp-S | 1/4 Spi | 4.55 | IT |
| Studebaker-Pres. 8...7C | 1115 | 124 1/2 | 7.00/16 | 8-3 1/2 x 4 1/2 | 30.0 | 250.4 | 117-4000 | 6.50 | ... | CI | LB | AI | Fram | AC | Str | Wal | AL | Wii | P-Inl | Mp-S | 1/4 Spi | 4.55 | IT |
| Willys-American.....441 | | 104 | 5.50/16 | 4-3 1/2 x 4 1/2 | 15.6 | 134.2 | 63-3900 | 6.48 | ... | CI | LB | AI | None | AC | Car | Mc | AL | AL | P-At | m-UP | 1/4 Own | 4.44 | 1/2 E |

ABBREVIATIONS:

1/2-Semi-floating
3/4-Three-quarter floating
1/2-E-Semi-elliptic
Al-Aluminum optional
†-Exclusive of Federal taxes or factory handling charge
(b)-Model 28W, 3.54; 28S, 3.90
(d)-De Luxe, 6.00/16; Traveler, 5.50/16
(f)-Model 11-6.00/16; Model 12-6.25/16
(g)-Models 1903-6, 3.92; Models

1904-7, 4.09; Models 1905-S, 4.36
(o)-C30N, 4.56; C30K, 3.91
A-D-Electric Auto-Lite Co. and Delco-Remy Division
AC-AC Spark Plug Co.
Al-Aluminum
AL-Electric Auto-Lite Co.
Als-Aluminum with struts
At-Atwood
B&B-Borg & Beck Division
bt-Ball and trunnion type
C-Conventional
Car-Carter Carburetor Corp.
CC-Conventional coil

CI-Cast iron
CN-Chrome nickel
CS-Cast steel
Dia-Continental Diamond Fibre Co.
DR-Delco-Remy Division
Hay-Hayes Industries, Inc.
IC-Independent coil spring
Inl-Inland with Long disc
IT-Independent transverse
LB-Link Belt Co.
Long-Long Mfg. Div.
m-Metal with anti-friction bearings.
Mc-MacKenzie Muffler Co.

Mec-Mechanics Universal Joint Division
Mor-Morse Chain Co.
Mp-Metal with plain bearings
Na-National Battery Co.
Nb-Needle bearing
Obl-Own clutch, Borg & Beck or Long disc
Old-Oldberg Mfg. Co.
P-Single plate clutch
Pur-Purulator Products, Inc.
rb-Roller bearing
Ro-Rockford Drilling Machine Div.
S-C-Stromberg and Carter
S-Saginaw Steering Gear Div.

SM-Saginaw and Mechanics
Spi-Spicer Mfg. Corp.
S-S-Saginaw and Spicer
Str-Stromberg (Bendix Products Div.)
Til-Tillotson Mfg. Co.
Tr-Transverse
Un-United Air Cleaner Div.
UP-Universal Products Co.
Var-Various
Wal-Walker Mfg. Co.
Wau-Waukesha Motor Co.
Whit-Whitney Mfg. Co.
Wii-Willard Storage Battery Co.
Z-Zenith Carburetor Div.

PROFIT MAKERS

PARTS • EQUIPMENT • TOOLS • ACCESSORIES

Niehoff Announces 1941 Line of Testers



C. E. Niehoff & Co., 4919 Lawrence Ave., Chicago, Ill., announces that the new line of improved precision instruments for tune-up operations is now available. The line includes a

Coilometer, a Condensometer, a Cam Angle Meter, and a Current Voltage Resistance unit. These instruments are of modernistic design, with etched aluminum panel with prominent switch and scale markings. Numerous technical improvements have been made to insure accurate testing. Illustration is of the Model T-18 Coilometer.

Reflector Re-silvering Outfit

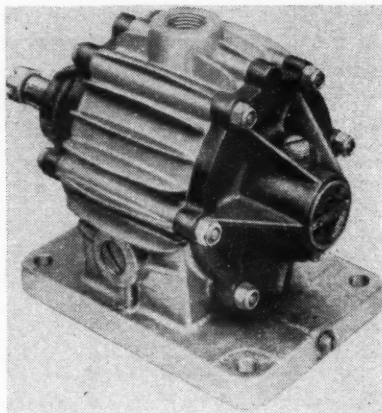
A new headlight reflector re-silvering outfit that requires only a few minutes time to plate a reflector has been announced by Bear Mfg. Co., Rock Island, Ill. Using an ordinary



bench grinder or motor, all that is necessary is to buff off the old reflector surface and polish the brass surface to a clear, high luster. The reflector is then dipped in Bear Re-Silver Solution for 10 seconds, rinsed in water, buffed until dry and polished by hand with flannel and silver polish. Equipment for handling every part of the job is furnished in the complete outfit.

Bendix Vacuum Pump

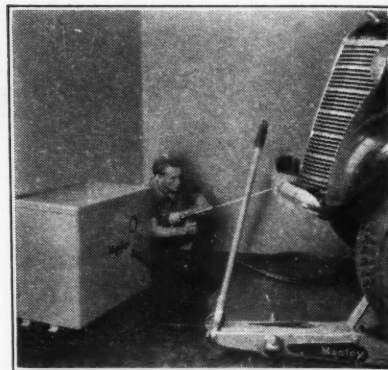
To meet the need for a heavy-duty vacuum pump as a source of vacuum for vacuum power brakes particularly on Diesel-Powered vehicles, Bendix Product Division of Bendix Aviation Corp., South Bend, Ind., has developed



a new rotary vacuum pump. This new B-K unit is provided with cast iron and plates and special composition vanes. It is built in two types, one adapted for lubrication from the supply of oil in the engine crankcase, and the other for use with a separate oil reservoir which provides the pump with an independent lubrication system.

Cabinet-Type Car Washer

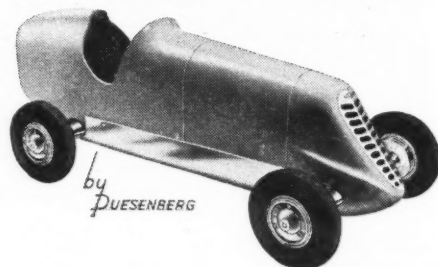
A heavy gage metal cabinet houses the new car washer introduced by the Manley Mfg. Division of American Chain & Cable Co., Inc., York Pa. Its high pressure pump delivers four gallons of water per minute at a constant pressure of 325 lbs. per square inch. Dial pressure gage in the front of the cabinet gives a reading of the pressure. Quiet and efficient operation is insured by the V-belt drive, and its



appearance is in keeping with the modern trend in shop equipment.

Miniature Race Cars

A. S. Duesenberg, famous in the automobile racing fraternity, has announced the formation of the Duesenberg Model Co., Indianapolis, Ind., for the manufacture of miniature racing cars—the car to be known as the “Dusey.” Advanced mechanical features are steel chassis and rear axle,



adjustable steel motor mount, front wheel drive, streamlined axles, inclosed radius rods, ball thrust bearings, and others. It is claimed that this is the only miniature racing car with front wheel drive which can be steered by front or rear wheels or both. The car is available as a kit which can be quickly assembled, or as a completely built-up car. For complete information and prices write J. E. Menaugh Co., 549 Washington Blvd., Chicago.



“—And I’m going to keep right on riding up here until he buys a heater!”

OOMPH... for engines, too!

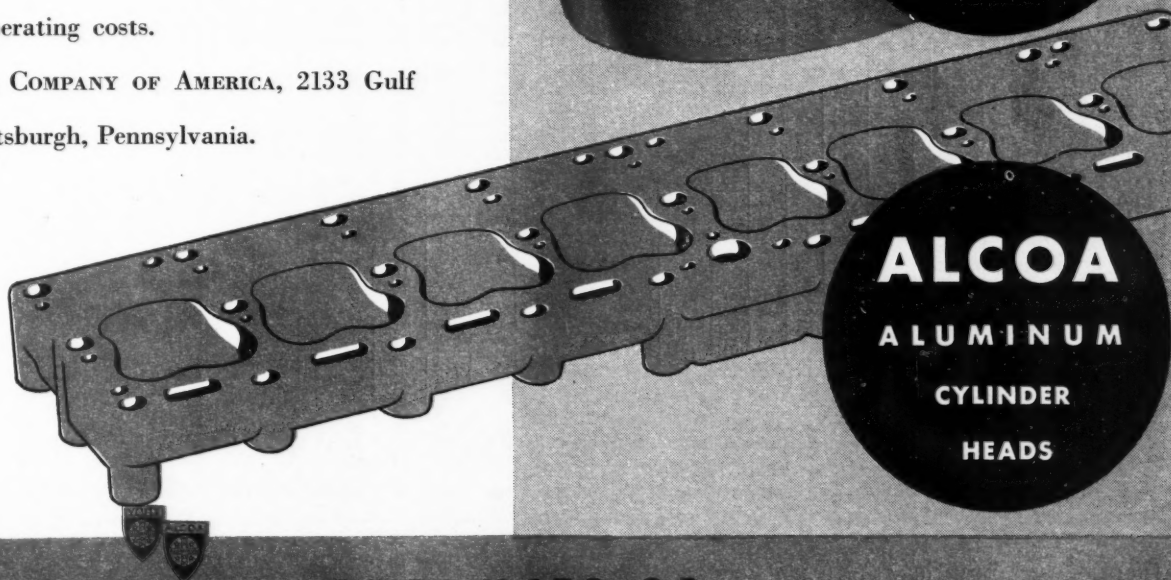
Eye-appeal for car bodies, certainly. But the prospect wants plenty of "get up and go" when he steps on that accelerator.

For real engine "oomph," here's a combination that can't be beat; Lynite T-Slot LO-EX Pistons and Aluminum Cylinder Heads. They're something to lift the hood and talk about. They give greater acceleration, higher torque, more power and lower operating costs.

ALUMINUM COMPANY OF AMERICA, 2133 Gulf Building, Pittsburgh, Pennsylvania.



LYNITE*
T-SLOT
LO-EX
REG. U.S. PAT. OFF.
PISTONS



ALCOA
ALUMINUM
CYLINDER
HEADS

PRODUCTS OF
ALCOA · ALUMINUM

Tune-Up Specifications

These Specifications Are Brought Up-to-Date Each Month by the
Car Manufacturers and Supersede All Others Previously Published

| MAKE AND MODEL | Compression Pressure at Cranking Speed (Lbs.) | Spark Plugs Make and Type | RINGS | | VALVES | | | | | | IGNITION | | | | | | Rods Removed From Capacity Crankcase (Qts.) Dry | FRONT AXLE | | | | | | | |
|----------------------------|--|---------------------------------|------------------------------|-------------------|----------------------------|------------------------------|----------------------|----------------------------|---------|---|--|----------------|--------------------------|---------------------------|----------------------|-----------------------|--|------------------|---------------------------------------|-------------------------|-------------------------|------------------|------------------|-----------------|-----------------------------------|
| | | | No. and Width Compression | No. and Width Oil | Inlet Seat Angle (Degrees) | Exhaust Seat Angle (Degrees) | Stem Diameter (Ins.) | Operating Tappet Clearance | | Inlet Valve Opens Before or After T. C. | Inlet Tappet Clearance for Valve Timing | No. of Degrees | No. of Flywheel Teeth | Breaker Points Gap (Ins.) | Cam Angles (Degrees) | Spark Plug Gap (Ins.) | | Timing | | | Capacity Cooling System | Caster (Degrees) | Camber (Degrees) | Toe-In (Inches) | King Pin Inclination (Degrees) |
| | | | | | | | | Inlet | Exhaust | | | | | | | | | Spark Occurs °TC | No. of Flyw. Teeth Spark Occurs TC | Timing Marks Located | | | | | |
| Bantam.....65 | 135 | Ch-H10 | 2-3/8 | 1-3/8 | 45 | 45 | .279 | .011H | .012H | .011 | 19B | 4 1/4B | .022 | 46 | .025 | 4B | 1B | None | A 3 | 5 1/2 | 15 | 1°-15' | 1/8 | 1 1/2 | |
| Buick.....41-40 | 142x | AC-104 | 2-3/8 | 2-1/8 | 45 | 45 | .372 | .015H | .015H | †† | 13B | 5 1/4B | .015 | 31 | .025 | 2B | 1B | Fly | A 8 | 13 | 3/8±3/8 | N1-11 | 0-1/8 | 3 1/2 | |
| Buick.....41-50 | 148x | AC-104 | 2-3/8 | 2-1/8 | 45 | 45 | .372 | .015H | .015H | †† | 13B | 5 1/4B | .015 | 31 | .025 | 4B | 1B | Fly | A 8 | 13 | 3/8±3/8 | N1-11 | 0-1/8 | 3 1/2 | |
| Buick.....41-60 | 151x | AC-104 | 2-3/8 | 2-1/8 | 45 | 45 | .375 | .015H | .015H | †† | 14B | 6B | .015 | 31 | .025 | 6B | 2 1/2B | None | A 10 | 16 1/4 | 3/8±3/8 | N1-11 | 0-1/8 | 3 1/2 | |
| Buick.....41-70 | 151x | AC-104 | 2-3/8 | 2-1/8 | 45 | 45 | .375 | .015H | .015H | †† | 14B | 6B | .015 | 31 | .025 | 6B | 2 1/2B | None | A 10 | 16 1/4 | 3/8±3/8 | N1-11 | 0-1/8 | 3 1/2 | |
| Buick.....41-90 | 151x | AC-104 | 2-3/8 | 2-1/8 | 45 | 45 | .375 | .015H | .015H | †† | 14B | 6B | .015 | 31 | .025 | 6B | 2 1/2B | None | A 10 | 18 | 3/8±3/8 | N1-11 | 0-1/8 | 3 1/2 | |
| Cadillac V8...61,62,63,60S | 182x | AC-104 | 2-(c) | 2-3/8 | 45 | 45 | .341 | AA | AA | AA | TC | TC | .0125 | 31 | .025 | 5B | 2B | TD | A 7 | 25 | -1 1/2-N2 | 3/8±3/8 | 5°-51' | | |
| Cadillac V8...67, 75 | 182x | AC-104 | 2-(c) | 2-3/8 | 45 | 45 | .341 | AA | AA | AA | TC | TC | .0125 | 31 | .025 | 5B | 2B | TD | A 7 | 25 | -1 1/2-N2 | 3/8±3/8 | 5°-51' | | |
| Chevrolet .Sp.DL & M.DL | .... | AC-104 | 2-3/8 | 1-3/8 | 30 | 30 | .340 | .006H | .013H | .006 | 3B | 1B | .018 | 39 | .040 | 5B | 2B | Fly | A 5 1/2 | 14 | 0-1 1/2 | N1/4±3/8 | 0-1/8 | 4°-45' | |
| Chrysler...C-28W, C-28S | 145x | AL-A7 | 2-3/8 | 2-3/8 | 45 | 45 | .340 | .008H | .010H | .014 | 12B | 4 1/4B | .020 | 34 1/2-38 | .025 | TC | TC | VD | A 5 | 18 | N1-11 | 0-1 1/4 | 0-1/8 | 4 1/2-6 | |
| Chrysler...C-30N, C-30K | 155x | AL-A7 | 2-3/8 | 2-3/8 | 45 | 45 | .340 | .008H | .010H | .011 | 6B | 2 1/2B | .018 | 27-30 1/2 | .025 | TC | TC | VD | A 6 | 24 | N1-11 | 0-1 1/4 | 0-1/8 | 4 1/2-6 | |
| Chrysler.....C-33 | 155x | AL-AL7 | 2-3/8 | 2-3/8 | 45 | 45 | .340 | .008H | .010H | .011 | 6B | 2 1/2B | .018 | 27-30 1/2 | .025 | 3B | 1B | VD | A 6 | 24 | N1-11 | 0-1 1/4 | 0-1/8 | 4 1/2-6 | |
| Crosley.....CB-41 | 80 | AL-A5 | 2-3/8 | 1-3/8 | 45 | 45 | .311 | .006C | .008C | .... | 20B | 5B | .020 | 46 | .025 | TC | TC | Fly | A 3 | .... | 6 1/2-11 | 2 | 1/8 | 6 1/2 | |
| De Soto-DeL. & Cust. .S-8 | 150x | AL-A7 | 2-3/8 | 2-3/8 | 45 | 45 | .340 | .008H | .010H | .014 | 12B | 2 1/2B | .020 | 34 1/2-38 | .025 | .... | .... | VD | A 5 | 18 | N1-11 | 0-1 1/4 | 0-1/8 | 4 1/2-6 | |
| Dodge-DeL. & Cust. .D-19 | .... | AL-A7 | 2-(c) | 2-3/8 | 45 | 45 | .340 | .008H | .010H | .014 | 9B | 3 1/2B | .020 | 34 1/2-38 | .025 | TC | TC | VD | A 5 | 15 | N1-11 | 0-1 1/4 | 0-1/8 | 4 1/2-6 | |
| Ford-DeL. & Sup. DeL..85 | 100 | Ch-H10 | 2-(b) | 1-(f) | 45 | 45 | (k) | .011C | .011C | .... | TC | TC | .015 | .... | .025 | 4B | 1 1/4B | Dist | A 5 | 23 1/4 | 4 1/2-9 | 1/4-1 | 1/8 | 8 | |
| Hudson-DeL. & Tr. 6...10 | 125 | HC-J9 | 2-3/8 | 2-(d) | 45 | 45 | .341 | .008H | .008H | .... | 10B | 3 3/4B | .020 | 35 | .032 | TC | TC | Fly | A 6 | 13 | 0±1/4 | 1/2±1/4 | 0-1/8 | 3°36' | |
| Hud.-Sup.& Com. 6...11,12 | 120 | HC-J9 | 2-3/8 | 2-(d) | 45 | 45 | .341 | .006H | .008H | .... | 10B | 3 3/4B | .020 | 35 | .032 | TC | TC | Fly | A 6 | 13 | 0±1/4 | 1/2±1/4 | 0-1/8 | 3°36' | |
| Hudson-Com'dore 8...14 | 119 | HC-J9 | 2-3/8 | 2-(d) | 45 | 45 | .343 | .008H | .008H | .... | 10B | 3 3/4B | .017 | 30 1/2 | .032 | TC | TC | Fly | A 9 | 18 | 0±1/4 | 1/2±1/4 | 0-1/8 | 3°36' | |
| Hudson-Comm. Cus. 8...17 | 119 | HC-J9 | 2-3/8 | 2-(d) | 45 | 45 | .343 | .006H | .008H | .... | 10B | 3 3/4B | .017 | 30 1/2 | .032 | TC | TC | Fly | A 9 | 18 | 0±1/4 | 1/2±1/4 | 0-1/8 | 3°36' | |
| Lincoln-Zeph. & Cont.V-12 | .... | Ch-H10 | 2-(g) | 1-(h) | 45 | 45 | .311 | .013C | .013C | .... | 10 3/8B | 3 1/4B | .015 | .... | .029 | 4B | 1 1/4B | Dist | A 5 | 22 | 3-5 | 1/4-3/4 | 1/8 | 3 1/4-4 1/4 | |
| Lincoln-Custom...V-12 | .... | Ch-H10 | 2-(g) | 1-(h) | 45 | 45 | .311 | .013C | .013C | .... | 10 3/8B | 3 1/4B | .015 | .... | .029 | 4B | 1 1/4B | Dist | A 5 | 22 | 3-5 | 1/4-3/4 | 1/8 | 3 1/4-4 1/4 | |
| Mercury.....95 | 100 | Ch-H10 | 2-(b) | 1-(f) | 45 | 45 | (k) | .011C | .011C | .... | TC | TC | .015 | .... | .025 | 4B | 1 1/4B | Dist | A 5 | 23 1/4 | 4 1/2-9 | 1/4-1 | 1/8 | 8 | |
| Nash-Amb. 600....4140 | 120 | AL-AN7 | 2-3/8 | 1-3/8 | 45 | 45 | .341 | .015 | .015 | .019 | 6B | 2B | .018 | 35 | .025 | TC | TC | VD | A 5 | 14 | 0 | 0-1/8 | 0-1/8 | 5 1/2 | |
| Nash-Amb. 6....4160 | 125 | AC- | 2-3/8 | 2-3/8 | 45 | 45 | .372 | .015 | .015 | .015 | 24B | 6B | .020 | 35 | .023 | .... | .... | VD | A 6 | 17 | 0-N1 1/2 | 1/4-3/4 | 3/8±3/8 | 4 1/2 | |
| Nash-Amb. 8....4180 | 110 | AC- | 2-3/8 | 2-(e) | 45 | 45 | .372 | .015 | .015 | .015 | 19B | 6B | .020 | 28 | .023 | 9B | 2 1/2B | VD | A 7 | 16 | 0-N1 1/2 | 1/4-3/4 | 3/8±3/8 | 4 1/2 | |
| Oldsmobile....Special 6 | 115 | AC-44 | 2-3/8 | 2-3/8 | 30 | 45 | .342 | .008H | .011H | .012 | 5B | 2B | .020 | 35 | .040 | TC | TC | Fly | A 5 | 18 | 0-N1 1/2 | N1/4-3/4 | 1/8±1/8 | 4°51' 1/2 | |
| Oldsmobile....Dynamic 6 | 115 | AC-44 | 2-3/8 | 2-3/8 | 30 | 45 | .342 | .008H | .011H | .012 | 5B | 2B | .020 | 35 | .040 | TC | TC | Fly | A 5 | 18 | 0-N1 1/2 | N1/4-3/4 | 1/8±1/8 | 4°51' 1/2 | |
| Oldsmobile....Custom 6 | 115 | AC-44 | 2-3/8 | 2-3/8 | 30 | 45 | .342 | .008H | .011H | .012 | 5B | 2B | .020 | 35 | .040 | TC | TC | Fly | A 5 | 18 | 0-N1 1/2 | N1/4-3/4 | 1/8±1/8 | 4°51' 1/2 | |
| Oldsmobile....Special 8 | 107 | AC-44 | 2-3/8 | 2-3/8 | 30 | 45 | .342 | .008H | .011H | .012 | TC | TC | .015 | 31 | .030 | 2B | 3/4B | Fly | A 6 | 22 | 0-N1 1/2 | N1/4-3/4 | 1/8±1/8 | 4°51' 1/2 | |
| Oldsmobile....Dynamic 8 | 107 | AC-44 | 2-3/8 | 2-3/8 | 30 | 45 | .342 | .008H | .011H | .012 | TC | TC | .015 | 31 | .030 | 2B | 3/4B | Fly | A 6 | 22 | 0-N1 1/2 | N1/4-3/4 | 1/8±1/8 | 4°51' 1/2 | |
| Oldsmobile....Custom 8 | 107 | AC-44 | 2-3/8 | 2-3/8 | 30 | 45 | .342 | .008H | .011H | .012 | TC | TC | .015 | 31 | .030 | 2B | 3/4B | Fly | A 6 | 22 | 0-N1 1/2 | N1/4-3/4 | 1/8±1/8 | 4°51' 1/2 | |
| Packard-110.....1900 | .... | (a) | 2-(m) | 1-1/8 | 30 | 45 | .339 | .007H | .010H | .012 | 1B | 1 1/2B | .020 | 35 | .028 | 6B | 2 1/2B | .... | 5 | 15 | 1/2±1/2 | 1/2±3/4-0 | 0-1/8-0 | 2 1/2 | |
| Packard-120.....1901 | .... | (a) | 2-(n) | 1-1/8 | 30 | 45 | .339 | .007H | .010H | .012 | 1B | 1 1/2B | .015 | 27 | .028 | 7B | 2 1/2B | .... | 6 | 17 | 1/2±1/2 | 1/2±3/4-0 | 0-1/8-0 | 2 1/2 | |
| Packard-160....1903, 4, 5 | .... | (a) | 2-(m) | 1-1/8 | 30 | 45 | .339 | aa | 11 | aa | 4B | 1 1/2B | .015 | 27 | .028 | 5B | 2B | .... | 7 | 20 | N3/4±1/2 | 1/2±3/4-0 | 0-1/8-0 | 2 1/2 | |
| Packard-180....1906, 7, 8 | .... | (a) | 2-(m) | 1-1/8 | 30 | 45 | .339 | aa | aa | aa | 4B | 1 1/2B | .015 | 27 | .028 | 5B | 2B | .... | 7 | 20 | N3/4±1/2 | 1/2±3/4-0 | 0-1/8-0 | 2 1/2 | |
| Plymouth.....P-11 | .... | AL-A7 | 2-(o) | 2-1/8 | 45 | 45 | .340 | .008H | .010H | .014 | 9B | 3 1/2B | .020 | 38 | .025 | TC | TC | VD | A 5 | 14 | N1-11 | 0-3/4 | 0-1/8 | 4 1/2-6 | |
| Plymouth-Spec. DeL.P-12 | .... | AL-A7 | 2-(o) | 2-1/8 | 45 | 45 | .340 | .008H | .010H | .014 | 9B | 3 1/2B | .020 | 38 | .025 | TC | TC | VD | A 5 | 14 | N1-11 | 0-3/4 | 0-1/8 | 4 1/2-6 | |
| Pontiac-DeL. 6....41-25 | 155x | AC-45 | 2-3/8 | 1-1/8 | 30 | 45 | .312 | .012H | .012H | .015 | 5B | 2B | .020 | 37 | .025 | 4B | 1 1/2B | Fly | A 6 | 18 | N1 1/2-N1 | 0 | 0-1/8 | 4 1/2 | |
| Pontiac-Stream. 6....41-26 | 155x | AC-45 | 2-3/8 | 1-1/8 | 30 | 45 | .312 | .012H | .012H | .015 | 5B | 2B | .020 | 37 | .025 | 4B | 1 1/2B | Fly | A 6 | 18 | N1 1/2-N1 | 0 | 0-1/8 | 4 1/2 | |
| Pontiac-Custom 6....41-24 | 155x | AC-45 | 2-3/8 | 1-1/8 | 30 | 45 | .312 | .012H | .012H | .015 | 5B | 2B | .020 | 37 | .025 | 4B | 1 1/2B | Fly | A 6 | 18 | N1 1/2-N1 | 0 | 0-1/8 | 4 1/2 | |
| Pontiac-DeL. 8....41-27 | 155x | AC-45 | 2-3/8 | 1-1/8 | 30 | 45 | .312 | .012H | .012H | .015 | 5B | 2B | .015 | 31 | .025 | 4B | 1 1/2B | Fly | A 6 | 19 1/2 | N1 1/2-N1 | 0 | 0-1/8 | 4 1/2 | |
| Pontiac-Stream. 8....41-28 | 155x | AC-45 | 2-3/8 | 1-1/8 | 30 | 45 | .312 | .012H | .012H | .015 | 5B | 2B | .015 | 31 | .025 | 4B | 1 1/2B | Fly | A 6 | 19 1/2 | N1 1/2-N1 | 0 | 0-1/8 | 4 1/2 | |
| Pontiac-Custom 8....41-29 | 155x | AC-45 | 2-3/8 | 1-1/8 | 30 | 45 | .312 | .012H | .012H | .015 | 5B | 2B | .015 | 31 | .025 | 4B | 1 1/2B | Fly | A 6 | 19 1/2 | N1 1/2-N1 | 0 | 0-1/8 | 4 1/2 | |
| Studebaker-Champ. 6...3G | 105 | Ch-J8 | 2-(c) | 1-3/8 | 45 | 45 | .312 | .016C | .016C | .020 | 15B | 5B | .020 | 35 | .024 | 1B | 1 1/2B | Fly | A 5 | 10 1/2 | 1-2 | 1/2 | 1/8±3/8 | 5 1/2 | |
| Studebaker-Com. 6...11A | 105 | Ch-8 | 2-3/8 | 1-3/8 | 45 | 45 | .343 | .016C | .016C | .020 | 15B | 5 1/2B | .020 | 35 | .025 | 2B | 3/4B | VD | A 6 | 13 | N1-11 | 1/2 | 1/8±3/8 | 5 1/2 | |
| Studebaker-Pres. 8...7C | 105 | Ch-8 | 2-3/8 | 1-3/8 | 45 | 45 | .343 | .016C | .016C | .020 | 15B | 5 1/2B | .020 | 34 1/2 | .025 | TC | TC | VD | A 8 | 15 | N1-11 | 1/2 | 1/8±3/8 | 5 1/2 | |
| Willys-American.....441 | 111 | Ch-J8 | 2-3/8 | 1-3/8 | 45 | 45 | .373 | .014C | .014C | .020 | 9B | 1 1/2B | .020 | 41 | .030 | TC | TC | Fly | A 4 | 11 1/4 | 3 | 2 | 1/2±3/8 | 7 1/2 | |

ABBREVIATIONS:

(x)—At 1000
(a)—AC-104; Champion Y-4
(b)—.0015 to .0020 in.
(c)—1 1/2; 1 1/2
(d)—1 1/2; 1 1/2

(e)—1 1/2; 1 1/2
(f)—.1535 in. to .1540 in.
(g)—.0930 in. to .0935 in.
(h)—.1845 in. to .1850 in.
(i)—.3095 in. to .3115 in.
(m)—1—.0932; 1—.1237

(n)—1—.0925—.0935; 1—.1235—.1240
(o)—1 1/2; 1 1/2
aa—Automatic adjustment
(k)—Above
AA—Automatic Adjuster

AC—AC Spark Plug Co.
AL—

PUBLICITY GETS ATTENTION

—BUT IT'S PERFORMANCE THAT GETS SALES

► No matter how many beautiful girls the photographer puts in the show-time pictures of your new models—which, incidentally, are an eyeful by themselves—the public still *buys* on performance. If you want to demonstrate your cars at their best, make sure the spark has been set to take advantage of modern high anti-knock fuel.

Also be sure that *the cars you deliver* to your customers have their engines tuned-up to give their best performance with the best gasoline. Explain to your customers *why* “the better the gas, the better the car,” as shown on the chart below. It’s a good idea, too, to suggest that they bring their cars in for a tune-up after every 5,000 miles so you can keep their engines running at peak performance all year round. For the more power and economy customers get, and the less trouble their cars give, the more likely they are to start favorable “word-of-mouth” advertising about your make of automobile—and that’s the most valuable kind of publicity.

*The better the gas—
the better the car!*

ETHYL GASOLINE CORPORATION

manufacturer of anti-knock fluids used by
oil companies to improve gasoline

THESE FACTS ABOUT PERFORMANCE APPLY TO EVERY 1941 CAR

Every new car and practically every car now on the road has a device—the spark adjustment—which permits a mechanic to tune-up the engine for extra power with the best gasoline. The chart below explains this in terms that both you and your *customers* will understand.



THE HIGHER THE
ANTI-KNOCK QUALITY
OF GASOLINE...



THE FARTHER YOU CAN
ADVANCE THE SPARK TOWARD
MAXIMUM POWER
(without knock or ping)



AND THE BETTER
THE PERFORMANCE
OF THE CAR

HERE ARE THE SIGNS OF IMPROVED GASOLINE



BETTER—This sign on a pump means that lead tetraethyl, a liquid, has been added to the gasoline to improve its anti-knock quality. “Leaded” gasoline is sold by dealers throughout the United States and Canada.



BEST—The “Ethyl” emblem means that the gasoline contains enough lead tetraethyl for highest anti-knock, so that the engine’s spark can be advanced closest to the point of maximum power and economy.

Motor Car Price, Weight and Body Table

Following are delivered prices at factory for cars with standard equipment and include all federal taxes with exception of Buick, Ford, Lincoln-Zephyr, Mercury and Willys. Optional equipment, state or local taxes, transportation charges and finance charges are extra.

| BODY, MAKE AND MODEL | Delivered Price | Shipping Weight | BODY, MAKE AND MODEL | Delivered Price | Shipping Weight | BODY, MAKE AND MODEL | Delivered Price | Shipping Weight | BODY, MAKE AND MODEL | Delivered Price | Shipping Weight | BODY, MAKE AND MODEL | Delivered Price | Shipping Weight | BODY, MAKE AND MODEL | Delivered Price | Shipping Weight |
|----------------------|-----------------|-----------------|----------------------|-----------------|-----------------|----------------------|-----------------|-----------------|------------------------------|-----------------|-----------------|----------------------------|-----------------|-----------------|----------------------|-----------------|-----------------|
| BANTAM | | | CHEVROLET | | | DODGE | | | LINCOLN-ZEPHYR | | | PACKARD | | | PONTIAC | | |
| Mast. Coupe, 2p. | 449 | 1271 | Master DeL. | | | DeLuxe | | | Coupe, 3p. | | | One Ten | | | (Continued) | | |
| Mast. Road., 2p. | 449 | 1211 | | | | | | | Sedan, 6p. | | | | | | Streamliner Six | | |
| Pickup Truck. | 475 | 1256 | Bus. Coupe. | 725 | 3020 | Coupe. | 825 | 3028 | Club Coupe, 6p. | | | Bus. Coupe, 2p. | 907 | 3150 | | | |
| Panel Truck. | 489 | 1331 | Coupe, 5p. | 756 | | Sedan, 2d., 6p. | 880 | 3093 | Conv. Coupe, 6p. | | | Club Cpe., 2-4p. | 1000 | 3200 | Sedan Coupe. | 923 | |
| Conv. Coupe, 2p. | 525 | | Town Sedan, 5p. | 767 | 3050 | Sedan, 4d., 6p. | 920 | | | | | Tr. Sed., 2d., 5p. | 1024 | 3245 | Sedan, 4d. | 980 | |
| Conv. Sedan, 4p. | 549 | 1296 | Sport Sedan, 5p. | 808 | | Custom | | | | | | D. Cb. Cpe., 2-4p. | 1038 | 3205 | Sup. Sed. Cpe. | | |
| Sta. Wagon, 4p. | 575 | 1411 | Cabriolet, 5p. | | | | | | | | | Tr. Sed., 4d., 5p. | 1056 | 3250 | Sup. Sed., 4d. | | |
| | | | Special DeL. | | | Broug., 2d., 6p. | 925 | 3156 | | | | D. T. Sed., 2d., 5p. | 1084 | 3270 | | | |
| | | | Bus. Coupe. | 777 | 3030 | Club Coupe, 6p. | 960 | 3156 | LINCOLN-CONTINENT | AL | | D. T. Sed., 4d., 5p. | 1116 | 3270 | Custom Six | | |
| | | | Coupe, 5p. | 808 | 3050 | Sedan, 2d., 6p. | 965 | 3191 | Cabriolet, 6p. | | | Conv. Cpe., 2-4p. | 1175 | 3310 | | | |
| BUICK | | | Town Sedan, 5p. | 818 | 3095 | Town Sedan, 6p. | 995 | 3226 | Coupe, 6p. | | | D. C. Cpe., 2-4p. | 1209 | 3315 | Sedan Coupe. | | |
| Special 41-40 | | | Sport Sedan, 5p. | 859 | 3140 | Limousine, 7p. | | | | | | Stat. Wag., 8p. | 1231 | 3460 | Tour. Sed., 4d. | | |
| Bus. Coupe, 2p. | 935 | | Cabriolet, 5p. | 957 | | | | | | | | D. Sta. Wag., 8p. | 1291 | 3470 | | | |
| Sedanet, 2d. | 1006 | | Stat. Wagon, 8p. | | | FORD | | | LINCOLN-CUSTOM | | | One Twenty | | | DeL. Eight | | |
| Tour. Sedan, 4d. | 1052 | | | | | DeLuxe-85 | | | Sedan, 8p. | | | Bus. Cpe., 2p. | 1112 | 3385 | Business Coupe. | 853 | |
| | | | CHRYSLER | | | | | | Limousine, 8p. | | | Club Cpe., 2-4p. | 1205 | 3430 | Sedan Coupe. | 889 | |
| Super 41-50 | | | Windsor C-28-W | | | Coupe, w.f.s. | 695 | | | | | Tr. Sed., 2d., 5p. | 1230 | 3504 | Tour. Sedan, 2d. | 899 | |
| Bus. Coupe. | 1031 | | | | | Coupe, f.s. | | | | | | Tr. Sed., 4d., 5p. | 1261 | 3510 | Tour. Sedan, 4d. | 946 | |
| Sport Coupe. | 1113 | | Coupe, 3p. | 945 | 3215 | Tudor Sedan. | 735 | | MERCURY | | | Conv. Cpe., 2-4p. | 1377 | 3585 | Conv. Coupe. | 1048 | |
| Tour. Sedan, 4d. | 1185 | | Brougham, 6p. | 1021 | 3305 | Fordor Sedan. | 775 | | Coupe, w.f.s. | 885 | | Sta. Wagon, 8p. | 1436 | 3720 | | | |
| Conv. Coupe. | 1267 | | Sedan, 4d., 6p. | 1051 | 3335 | Station Wagon. | | | Sedan, 2d. | 920 | | D. Sta. Wag., 8p. | 1496 | 3730 | Streamliner Eight | | |
| Conv. Phae., 4d. | 1555 | | Town Sedan, 6p. | 1111 | | | | | Club. Conv. | 950 | | Conv. Sedan, 5p. | 1723 | 3725 | | | |
| | | | Club Coupe, 5p. | 1041 | 3295 | Super DeLuxe-85 | | | Station Wagon. | 1110 | | | | | Sedan Coupe. | 948 | |
| Century 60 | | | Sedan, 7p. | | | | | | | | | Super Eight One Sixty-1903 | | | Sedan, 4d. | 1005 | |
| Bus. Coupe. | 1195 | | Limousine, 7p. | | | Coupe, w.f.s. | 740 | | | | | Bus. Coupe, 2p. | 1594 | 3875 | Sup. Sed. Cpe. | | |
| Sedanet, 2d. | 1241 | | Royal C-28-S | | | Coupe, f.s. | | | | | | Club Coupe, 2-4p. | 1709 | 3800 | Sup. Sed., 4d. | | |
| Tour. Sedan, 4d. | 1288 | | Coupe, 3p. | 998 | 3215 | Tudor Sedan. | 780 | | | | | Tr. Sed., 4d., 5p. | 1750 | 3885 | Custom Eight | | |
| | | | Sedan, 2d., 6p. | 1075 | 3305 | Fordor Sedan. | 820 | | | | | Conve. Cpe. 2-4p. | 1892 | 3985 | | | |
| Roadmaster 41-70 | | | Sedan, 4d., 6p. | 1125 | 3335 | Conv. Club Cpe. | 810 | | NASH | | | D. C. Cpe., 2-4p. | 2067 | 3985 | Sedan Coupe. | 1020 | |
| Sport Coupe. | 1282 | | Club Coupe, 5p. | 1096 | 3295 | Conv. Club Cpe. | 905 | | | | | Conv. Sedan, 5p. | 2180 | 4140 | Tour. Sedan, 4d. | 1077 | |
| Tour. Sedan, 4d. | 1364 | | Town Sedan, 6p. | 1175 | 3350 | Station Wagon. | | | Ambassador 600 | | | D. Conv. Sed., 5p. | 2405 | 4160 | | | |
| Conv. Coupe. | 1457 | | Limousine, 7p. | | | | | | Business Coupe. | | | 1904 | | | | | |
| Conv. Phae., 4d. | 1775 | | New Yorker, C-30-N | | | HUDSON | | | Sedan, 2d. | | | Tr. Sed., 4d., 5p. | 2009 | 4305 | STUDEBAKER | | |
| | | | Coupe, 3p. | 1195 | 3670 | Traveler-10 | | | A. P. Coupe. | | | 1905 | | | Champion Custom | | |
| Limited 41-90 | | | Brougham, 6p. | 1248 | 3780 | | | | Sedan, 4d. | | | Tour. Sedan, 7p. | 2161 | 4495 | | | |
| Tour. Sedan. | 2155 | | Sedan, 4d., 6p. | 1278 | 3805 | Coupe, 3p. | 702 | 2790 | Sedan, 4d. | | | Limousine. | 2289 | 4570 | Coupe. | 690 | |
| Tour. Sedan, 8p. | 2380 | | Town Sedan, 6p. | 1328 | 3835 | Sedan, 2d., 6p. | 772 | 2850 | A. P. Cabriolet. | | | One Eighty-1906 | | | Coupe, 5p. | 725 | |
| Limousine. | 2465 | | Club Coupe, 5p. | 1268 | | Club Coupe, 6p. | 795 | 2840 | | | | Conv. Vict., 5p. | 4550 | 4040 | Club Sedan. | 730 | |
| | | | Traveler C-30-K | | | Sedan, 4d., 6p. | 800 | 2903 | Ambassador 8 Business Coupe. | | | | | | Cruis. Sedan. | 770 | |
| | | | Coupe, 3p. | 1275 | 3670 | | | | Sedan, 2d. | | | 1907 | | | | | |
| | | | Brougham, 6p. | 1325 | 3780 | DeLuxe-10 | | | A. P. Coupe. | | | Tr. Sed., 4d., 5p. | 2587 | 4350 | DeLuxe | | |
| | | | Sedan, 4d., 6p. | 1345 | 3805 | Coupe, 3p. | 810 | 2840 | Sedan, 4d. | | | Formal Sed., 5p. | 3045 | 4380 | Coupe. | 720 | |
| | | | Club Coupe, 5p. | 1335 | | Sedan, 2d., 6p. | 831 | 2900 | Sedan, 4d. | | | Brougham, 5p. | 3500 | 4050 | Coupe, 5p. | 755 | |
| | | | Town Sedan. | 1375 | 3835 | Club Coupe, 6p. | 857 | 2895 | Sedan, 4d. | | | Cabriolet. | 4650 | 4475 | Club Sedan. | 760 | |
| CADILLAC | | | Crown Imperial. | | | Convertible, 6p. | 865 | 2950 | A. P. Cabriolet. | | | Sport Sedan, 5p. | 4750 | 4490 | Cruis. Sedan. | 800 | |
| Series 61 | | | Sedan, 4d., 6p. | | | | | | Ambassador 8 Business Coupe. | | | | | | | | |
| Coupe, 5p. | 1345 | | Limousine, 7p. | | | Super Six-11 | | | Sedan, 2d. | | | 1908 | | | DeLux-Tone | | |
| DeL. Coupe, 5p. | 1435 | | Crown Imp. | | | Coupe, 3p. | 887 | 2935 | A. P. Coupe. | | | Tour. Sedan, 7p. | 2724 | 4590 | Coupe. | 755 | |
| Tour. Sedan, 5p. | 1445 | | C-33 | | | Sedan, 2d., 6p. | 907 | 3000 | Sedan, 4d. | | | Tr. Lim., 7p. | 2868 | 4650 | Coupe, 5p. | 790 | |
| DeL. Tour. Sed. | 1535 | | Sedan. | | | Club Coupe, 6p. | 942 | 2980 | Sedan, 4d. | | | Town Car. | 4775 | 4200 | Club Sedan. | 795 | |
| | | | Limousine. | | | Sedan, 4d., 6p. | 936 | 3050 | Sedan, 4d. | | | Tr. Sed., LeB., 7p. | 5300 | 4740 | Cruis. Sedan. | 835 | |
| Series 62 | | | Town Sedan. | | | Convertible, 6p. | 1160 | | A. P. Cabriolet. | | | Tr. Lim., LeB., 7p. | 5550 | 4850 | | | |
| Coupe, 2-4p. | 1420 | | | | | | | | | | | | | | | | |
| Tour. Sedan. | 1485 | | CROSLEY | | | Commodore Six-12 | | | OLDSMOBILE | | | PLYMOUTH | | | Commander 6 Custom | | |
| DeL. Cpe., 2-4p. | 1510 | | Coupe, 2p. | 315 | 950 | | | | Special Six | | | Coupe, 2p. | 685 | 2809 | | | |
| DeL. Tr. Sed. | 1585 | | Std. Sedan, 4p. | 368 | 975 | Coupe, 3p. | 959 | | Bus. Coupe, 3p. | 852 | | Sedan, 2d., 5p. | 739 | 2859 | Cruis. Sedan. | 985 | |
| DeL. Conv. Cpe. | 1645 | | DeL. Sedan, 4p. | 376 | 975 | Sedan, 2d., 6p. | 990 | 3050 | Club Coupe, 3-6p. | 893 | | Sedan, 4d., 5p. | 780 | 2889 | Land Cruiser. | 1030 | |
| DeL. Conv. Sed. | 1965 | | Pkw. Delivery. | 390 | 1030 | Club Coupe, 6p. | 1021 | 3045 | Sedan, 2d., 6p. | 898 | 3190 | Utility Sed., 2d. | 739 | | | | |
| | | | Cov. Wag., 2p. | 402 | 1075 | Sedan, 4d., 6p. | 1018 | 3100 | Conv. Cpe., 3-6p. | 945 | 3230 | | | | DeLux-Tone | | |
| | | | Cov. Wag., 4p. | 417 | 1100 | Convertible. | 1226 | | Dynamic Six | | | DeLuxe | | | Cruis. Sedan. | 1050 | |
| | | | Panel Delivery. | 451 | 1100 | | | | Club Sedan, 6p. | | | Sedan, 2p. | 729 | 2839 | Land Cruiser. | 1095 | |
| Series 60S | | | Sta. Wag., 2p. | 454 | 1135 | Commodore 8-14 | | | Sedan, 4d., 6p. | 954 | 3325 | Sedan, 4d., 5p. | 779 | 2899 | | | |
| Tour. Sedan, 5p. | 2195 | | Sta. Wag., 4p. | 470 | 1160 | Coupe, 3p. | 1002 | 3135 | | 1010 | 3390 | | 820 | 2924 | President 8 Custom | | |
| Tr. Sed. Div., 5p | 2345 | | | | | Sedan, 2d., 6p. | 1027 | 3210 | Custom Six | | | Special DeL. | | | | | |
| | | | DE SOTO | | | Club Coupe, 6p. | 1064 | 3210 | Club Coupe, 3-6p. | 1043 | 3320 | Coupe, 2p. | 760 | 2866 | Cruis. Sedan. | 1115 | |
| Series 67 | | | De Luxe | | | Sedan, 4d., 6p. | 1063 | 3260 | Sedan, 4d., 6p. | 1099 | 3410 | Coupe, 2d., 5p. | 805 | 2936 | Land Cruiser. | 1160 | |
| Tour. Sedan, 5p. | 2595 | | Coupe, 3p. | 898 | | Convertible, 6p. | 1276 | | Conv. Cpe., 3-6p. | 1191 | | Sedan, 4d., 5p. | 810 | 2941 | | | |
| Tour. Sedan, 7p. | 2735 | | Sedan, 2d., 3p. | 965 | | | | | Special Eight | | | Conv. Cpe., 2-4p. | 970 | 3166 | DeLux-Tone | | |
| Tr. Sed. Div., 5p | 2745 | | Sedan, 4d., 6p. | 995 | | Commodore Cust. 8-15 | | | Club Coupe, 3-6p. | 935 | | Sedan, 7p. | 1045 | | Cruis. Sedan. | 1180 | |
| Tr. Imperial, 7p. | 2890 | | Sedan, 7p. | | | Coupe, 3p. | 1088 | | Sedan, 4d., 6p. | 987 | 3360 | Limousine, 7p. | | | Land Cruiser. | 1225 | |
| | | | Club Coupe, 5p. | 985 | | Club Coupe, 6p. | 1151 | 3235 | Conv. Cpe., 3-6p. | 1089 | | Station Wagon. | 995 | | | | |
| | | | | | | | | | | | | | | | | | |
| Series 75 | | | Custom | | | Commodore Cust. 8-17 | | | Dynamic Eight | | | PONTIAC | | | | | |
| Bus. Sedan, 9p. | 2895 | | Coupe, 3p. | 945 | | Sedan, 4d., 6p. | 1251 | 3400 | Club Sedan, 6p. | 989 | 3420 | DeLuxe Six | | | WILLIS-AMERICAR | | |
| Tour. Sedan, 5p. | 2995 | | C. Cb. Cpe., 5p | | | | | | Sedan, 4d., 6p. | 1045 | 3500 | Business Coupe. | 828 | | | | |
| Bus. Imperial, 9p | 3050 | | Brougham, 6p. | 1020 | | | | | Custom Eight | | | Sedan Coupe. | 864 | | Coupe. | | |
| Tour. Sedan, 7p. | 3140 | | Sedan, 4d., 6p. | 1045 | | Big Boy-18 | | | Club Coupe, 3-6p | 1079 | 3430 | Tour. Sedan, 2d. | 874 | | Sedan. | 2370 | |
| Tr. Sed. Div., 5p | 3150 | | Town Sedan, 6p. | 1095 | | Carryall, 8p. | | | Sedan, 4d., 6p. | 1135 | 3500 | Tour. Sedan, 4d. | 921 | | Station Wagon. | | |
| Tr. Imperial, 7p | 3295 | | Club Coupe, 5p. | 1035 | | Sedan, 8p. | | | Conv. Cpe., 3-6p | 1227 | 3620 | Conv. Coupe. | 1023 | | | | |
| Formal Sedan, 5p | 3920 | | Sedan, 7p. | | | | | | Conv. Phae., 6p | 1575 | | | | | | | |
| | | | Limousine, 7p. | | | | | | | | | | | | | | |

Mr. CLEENIE Goes to Town!



Here's **SELLING**
the easy AC way



DISPLAY
this Nationally Advertised
SIGN



CLEAN
and **REGAP**
plugs at
5c EACH



SELL
2 New Plugs
for every 6 cleaned*
*National Average



Suggest
CLEANING
to every customer
who leaves his car

—and AC Cleaning Stations GO WITH HIM!

According to the record, all that a smart retailer needs to do, in order to *average* two new plugs sold for every six plugs cleaned, is—

*Suggest plug cleaning to every customer
who leaves his car for service of any kind.*

That's easy. It takes no extra selling effort. And it boosts plug sales.

And, AC doesn't leave retailers to carry the selling load alone. AC gives Registered Stations timely window advertising every 60 days. It gives them special promotion campaigns like the "Red Can Campaign" to stimulate buying still more. And it gives them distinctive, powerful national advertising—all year long.

There's plenty of business. Get your share—with AC!

Sell Plugs The AC Way

SEE YOUR AC WHOLESALER'S SALESMAN—TODAY



AC SPARK PLUG DIVISION • General Motors Corporation • FLINT, MICHIGAN

M.E.W.A. National Vocational Education Group To Cooperate With Schools

Because of the ever increasing need for competent automotive maintenance men and the likelihood, with world conditions as they are, that the need is likely to become more serious, the Motor and Equipment Wholesalers Assn. is putting under way a plan whereby it will assist vocational training school authorities throughout the country in standardizing on a definite educational system. Thus read a statement in *The M.E.W.A. Times* recently.

Three problems confront authorities in automotive vocational training, the bulletin points. Funds are needed for adequate equipment and capable training personnel. Instruction material worked out in accordance with proved principles and properly graded to suit various ages of students in their progression from beginner to graduate. And, the third major problem is that of placement of men who have completed training.

M.E.W.A. plans to cooperate with vocational authorities in obtaining proper instruction material. M.E.W.A. members have in the past few years worked with local vocational school heads and have aided in developing better standards in automotive maintenance courses.

M.E.W.A. board of directors recently authorized the appointment of a National Committee to meet shortly to outline the starting program.

Wheel Balancing

(Continued from page 37)

rotation (wheel spindle). Then if the wheel is unbalanced a greater force is set up at the point of unbalance.

If the unbalanced weight is located as shown in Fig. 1, the force acting on that weight will be as indicated by the arrow. Such an unbalanced condition is easily compensated by adding a balancing weight *BW* at a point diametrically opposite to *W*. The two forces set up by *W* and *BW* will be exactly equal and as they are in opposite direction, regardless of the position of the wheel, the wheel will be in perfect balance.

Unfortunately, such a condition seldom exists. The more usual condition is shown in Fig. 2 and Fig. 3. Here the unbalance point is situated on the side of the wheel or tire and rotation results in a force as indicated by the heavy arrow, and as this force is to one side of the center line of the wheel it will cause the wheel to wobble when rotated. If the wheel is balanced by adding a weight *BW*, it will obviously be in static balance, but the dynamic condition will be intensified as the two forces of *W* and *BW* tend to force the wheel to the right at the top and to the left at the bottom. This is only an instantaneous condition for, as the wheel rotates, the forces gradually reverse until when *W* is at the top, the top of the wheel will be forced to the left and the bottom of the wheel to the right.

This reversal of forces each revolution will cause a severe wheel wobble which will increase with the size of the weights and the speed of rotation.

To place this particular wheel in both static and dynamic balance it would be necessary to place the weight *BW* on the same side of the wheel as *W*.

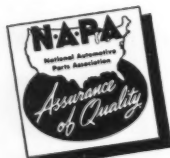
Naturally the determination of just where to place the balancing weights and their size requires special equipment. The usual practice is to add two weights for purposes of balancing and the weights are attached to the rim of the wheel. However, each company manufacturing wheel balancing equipment has their own method of determining how much weight is required and the points where the weights should be attached. Additional information on wheel balancing can be obtained by writing to the manufacturers of such equipment.



● New Monmouth Bearings slip into place quickly and accurately. That's because they're precision made for exact fit at the factory—the same bearings used as original equipment in the majority of passenger car, truck, and tractor engines. If crankpin wear makes regrinding necessary Monmouth factory-finished undersizes are available to give you the correct clearances for proper oil control. When oil-pumping shows up, check for worn bearings, *FIRST!* Then use Monmouth Bearings. Original equipment alloys—babbitt, cadmium-nickel, and copper-lead, packaged in pairs and complete rod bearing sets.

NOTE: In regrinding crankshafts, always regrind to standard undersize to permit use of factory-finished undersize bearings.

MONMOUTH PRODUCTS COMPANY, CLEVELAND, OHIO
Engine Bearings • Clutch Plates and Clutch Parts • King Bolt Sets

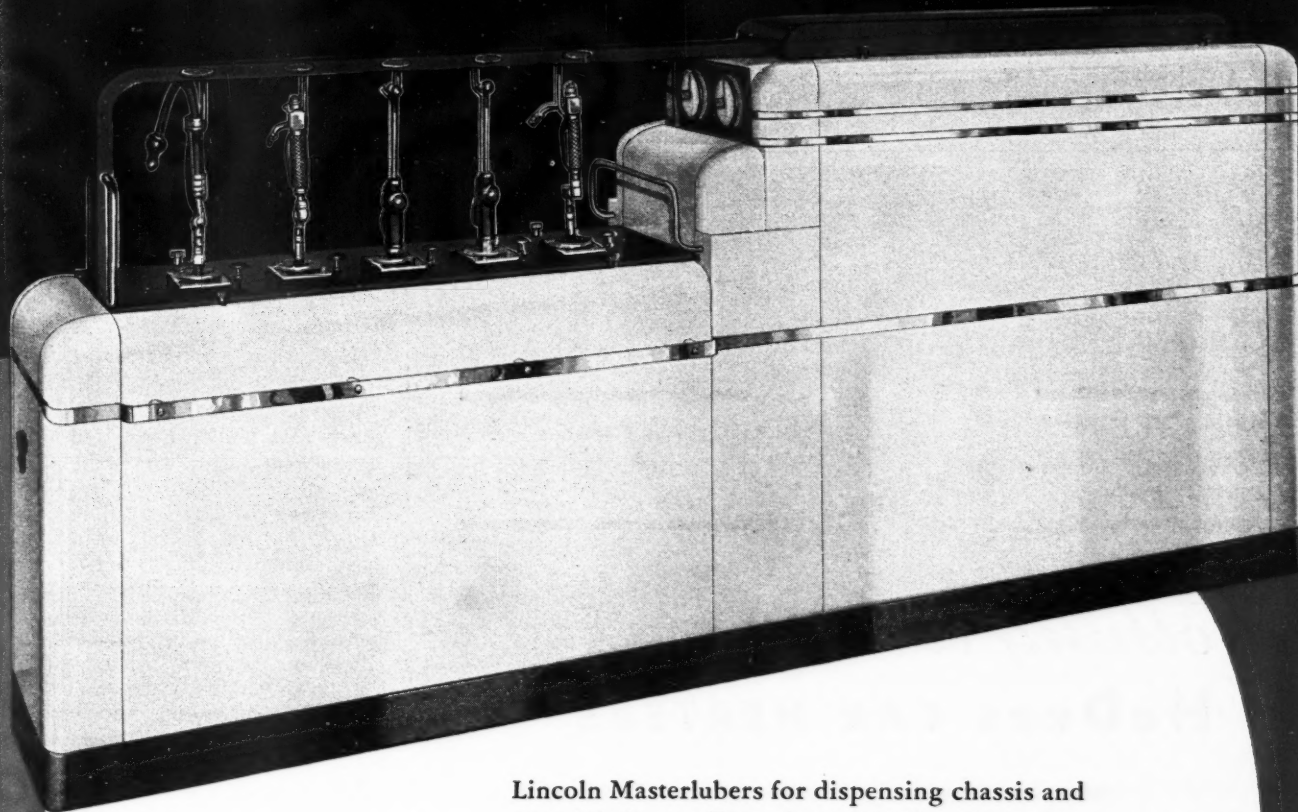


Master stocks of Monmouth Engine Bearings are maintained in NAPA Warehouses from coast to coast, assisting hundreds of jobbers in every section of the country to give you prompt service even on rarely called-for numbers.



THE SAME BEARINGS USED AS ORIGINAL EQUIPMENT IN THE MAJORITY OF PASSENGER CAR, TRUCK AND TRACTOR ENGINES

LINCOLN MASTERLUBER



GET COMPLETE
INFORMATION
Today

Lincoln Masterlubers for dispensing chassis and gear lubricants direct from 100-lb. original refinery drums, present a striking combination of utility, showmanship and compactness, and are especially designed for installation between two lifts or alongside of one lift. The higher portion of the cabinet houses the air-motor-operated Lubriguns as well as the refinery drums. The lower portion houses two chassis and two gear lubricant delivery hoses and one air hose. At purchaser's option Masterlubers may be equipped with either a Lubreel or Lubwell for retracting the hoses.



LINCOLN ENGINEERING COMPANY

Pioneer Builders of Engineered Lubricating Equipment

ST. LOUIS, MO., U. S. A.

SUPER SERVICE IN HOLLYWOOD

(Continued from page 31)

The Muller brothers began twenty years ago with that *one idea*. Sons of a hay and grain, fuel and ice dealer, these men began humbly enough with a corner brick building and an open lot. Step-by-step the super-service idea was expanded until today their quick services to attract steady customers and their complete equipment to serve all car owner wants have given them a business that is as up-

to-date as tomorrow morning's newspaper. What does it amount to? Briefly, they employ over 125 workmen, serve 500,000 customers, and their annual gross has already passed the \$1,000,000 mark.

Buyers of quick services become buyers of preventive maintenance and emergency service. Therefore, Muller Bros. make it easy to buy gas and oil; six lubrication lifts to facilitate

the lubrication sales. Muller Bros. stress car washing with a \$50,000 conveyor system that steams, washes, cleans, rubs and dries cars in 15 minutes flat. Muller Bros. merchandise tires with their famous fifty-foot tower of tires. Muller Bros. sell batteries, radios, parts, accessories and supplies in a self-service-type accessory shop, and with open-air marts spotted where waiting customers congregate. Then there is safety inspection, minor brake service, headlight adjustments, tire repairs, battery and ignition work. These are quick services—the magnets that attract trade—the much needed and frequently performed operations that establish constant consumer contacts so necessary for successful super service.

Had they stopped there, Muller Bros. would still rank high as a service outlet. But they didn't. Quick services at Muller Bros. feed business to the repair shop where their special equipment and tools enables them to "do many a half-day job in half-an-hour . . . and do it better!" Major overhauling, engine, clutch, transmission and rear axle jobs, wheel alignment and frame straightening, painting and polishing, body and fender repairs, upholstery and top work, ignition and engine tune-up, complete brake service, towing and emergency service . . . all this and quick services too.

There they are, the two simple fundamentals of super service. Quick services to cultivate regular customers . . . and full equipment to meet all customer demands quickly.

Of course this is a million dollar business—"the world's greatest"—and perhaps you may think that it's different from your business. Maybe its size is different, but the basic idea of super service can be readily applied in almost any locality, large or small.

To know super service is to apply the Muller Bros. idea to your business. But let there be no confusion of words. Super service is more than a glowing phrase . . . more than modern style of architecture . . . more than gas, oil and lubrication selling . . . super service is a way of doing business, a method of serving people, a merchandising means whereby you serve all of the needs of all the car owners attracted to your shop. It's super maintenance, in that you reach car owners regularly with the services they buy most frequently, in order that, by habit, they will think of you and buy from you when there is need for preventive or emergency service.



Nothing is Hotter than HaDees CAR HEATERS

When a car owner invests his money in a heater these days, he expects to get heat . . . plenty of it . . . and fast! Why risk the loss of his goodwill by selling him something that may not deliver the goods? Hook up with HaDees . . . the heaters that sell easily on the strength of their past performance records and install more quickly because of their unique construction. You'll never have to make excuses for any HaDees, whether it be the Model C-130 at only \$9.95 or the elaborate Model H-502 at \$21.95. And another thing . . . the HaDees 1941 proposition is a mighty profitable one, too. Write today for facts.

LIBERTY FOUNDRIES CO., ROCKFORD, ILL., Division of Burd Piston Ring Company



Let the 1941 UNDERSEAT MODEL Pep Up Sales

Here's "just what the doctor ordered" to get attention and put new profits in your heater sales . . . UNDERSEAT Heaters by HaDees. They're popularly priced and fit old as well as new cars.

Look to

HaDees

FOR THE LATEST IN FULL-CAR COMFORT

"OUR LUBE BUSINESS SHOT UP 170%!"

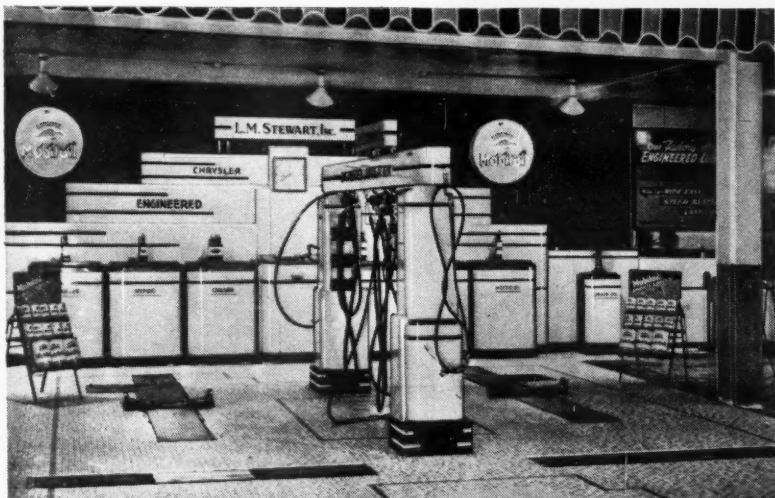
SAYS
L. M. STEWART
 President
 L. M. Stewart, Inc.
 St. Louis, Missouri



"**W**E PRACTICALLY TRIPLED our lubrication business in less than three years — thanks to Socony-Vacuum's plan for car dealers.

"In 1937 — when we began selling Mobiloil — we thought our lubrication business was good. But since then, use of the improvements and sales helps suggested by the Socony-Vacuum Man helped us boost lube jobs more than 170%. We also found that labor sales and other services increased correspondingly.

"The best part is that the increase in lube volume was not just a 'shot in the arm.' Business kept right on climbing. And we can thank the Socony-Vacuum Car Dealer Service Plan for corresponding increases in labor sales and other shop services."



HERE'S THE COMPLETE PRACTICAL PLAN SOCONY-VACUUM OFFERS YOU!



★ **REVIEW OF YOUR LUBRICATION DEPARTMENT.** Trained men survey your present set-up... suggest ways to develop its profit possibilities.

★ **REVIEW OF YOUR MARKET POSSIBILITIES.** A careful study helps us to calculate the future growth of your business — to determine the size and type lubricatorium you need.

★ **ADVICE ON LAYOUT AND EQUIPMENT.** We don't sell equipment—but our years of experience will help you select the type of equipment and layout you need to get new customers.

★ **HARD-HITTING SALES PROMOTION PIECES.** Our dealer aids—folders, reminder cards, etc.—are designed and prepared to help push your service specials.

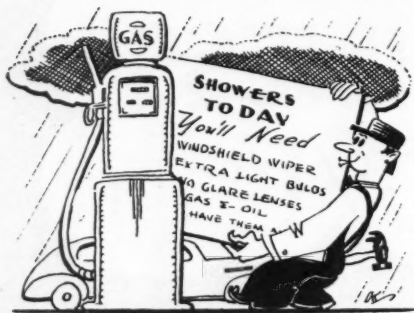
★ **TRAINING FOR YOUR MEN.** Our experienced experts train your men—coach them in selling—with movies, manuals, and charts.

And we don't stop there! Our experts keep on helping you as business increases... profits jump. That's why car dealers the country over say: "Socony-Vacuum's Plan starts where others leave off."

ADDRESS THE CAR DEALER DIVISION — SOCONY-VACUUM OIL COMPANY, INC., 26 BROADWAY, NEW YORK CITY

BEGINS WHERE OTHERS LEAVE OFF..
Socony-Vacuum's Car Dealer Service Plan

"WEATHER-BOARD" PAYS CASH



Repairman finds that warning motorists of bad weather and suggesting accessories needed in emergencies helps business

By F. R. COZZENS



**It's FREE
HYGRADE'S
NEW GUIDE
TO
FUEL
PUMP
PROFITS**

**VALUABLE
INFORMATION
NEEDED BY
EVERY SHOP**

**KEEP THE PROFITS
IN YOUR OWN
SHOP WITH
HYGRADE
SERVICE PARTS
FOR
CARBURETORS
FUEL PUMPS
SPEEDOMETERS
SHOCK ABSORBERS
TEMPERATURE GAUGES
FUEL LINES
AND FITTINGS**

A SHORT, clean-cut story that tells you in simple language how other shops are making Fuel Pump Service PAY REAL MONEY!

An amazing revelation of the profit-building possibilities in a neglected field. Revenue from a new source! A thriving "business" within a business." And all so easy that you'll wonder how such a golden opportunity escaped you!

Every shop ought to have a copy of this highly informative Bulletin. It's FREE to any repairman, who will take the trouble to mail us a postcard. Do it NOW—while the subject is on your mind. You'll never regret it!

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FREE
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**HYGRADE PRODUCTS CO., INC., 35-35 Thirty-fifth St.,
Long Island City, N. Y. Please mail without cost or obligation, a copy of your Bulletin: "FUEL PUMP SERVICE PAYS."**

NAME
ADDRESS
CITY AND STATE
YOUR JOURNAL'S NAME

AUTUMN storms are business builders for J. A. Montgomery, owner of the Pioneer Sales & Service Station, near Crooksville, Ohio. Montgomery makes it a rule to post radio storm warnings upon a sign near his gas pumps, along with a list of items most likely to be needed by motorists who encounter them. Besides reminding motorists of timely accessories, the sign serves another purpose. Farmers and other trades-people drive out Montgomery's way to get weather reports, and many of them stop for gas, oil, and service.

On a recent occasion, the sign read thus:

**THUNDERSHOWERS—
this afternoon.**

You'll need

A reliable windshield Wiper.
Sponge & Cleaner for mud spots.
Extra light Bulbs.
No-Glare Lenses.
Plenty of Gas & Oil.
Good Brakes.

We Have Them All.

"The modern motorist doesn't plan his trips by the weather," Montgomery declares. "And he is commonly caught in storms where some accessory would be worth many times its cost. I got the habit of posting storm warnings, to remind folks of such emergencies, and so well did the plan take that sales on at least a dozen items were boosted more than 50 per cent. The mention of storms arouses interest in safe driving, and with it we work in suggestions as to brake service, tire alignment, and general motor adjustment. We learned also that many farmers and day laborers were either too busy to listen in for weather reports or were without radio facilities. These folks often drive a mile or more out of their course to consult our weather board and quite naturally, they find it convenient to patronize our station.

Our posting appears on an average of three times per week. We change the items listing from time to time to suit the occasion, and aim to vary the list to attract all classes of motorists."

EVERYONE KNOWS IT PAYS TO BACK THE WINNING TEAM



**We believe the Du Pont "ZERONE"- "ZEREX" combination will
lead the field in Anti-freeze**

THERE is a recognized need and demand for two types of anti-freeze—one in the popular price field and one in the premium field. The introduction of Du Pont "Zerex" makes available *both* types of anti-freeze, backed by one well-known and responsible company, and supported by nationwide advertising.

Dealers who have handled "Zerone" in the past have found it easy to sell because it is a Du Pont product and because the retail price is uniformly a dollar a gallon all over the country. Dealers have also enjoyed exceptionally small carry-overs on "Zerone."

The policies which have proved so successful in marketing "Zerone" will be extended to the new product, "Zerex."

Consumer acceptance is assured by public recognition of Du Pont's leadership in chemical research and by the full force of local and national advertising.

"Zerone"- "Zerex" combination is golden opportunity for dealers

"Zerex" is made to a new and exclusive Du Pont formula. Special ingredients make it different from all other premium anti-freeze brands. "Zerex" protects metals in the cooling system against rust and corrosion. It is an *anti-acid* that prevents the formation in the cooling solution of chemicals that attack aluminum cylinder heads, rubber hose and pump packings. No clogging of small radiator passages and tubes—improved cooling and engine efficiency—more heat from the car heater.

"Zerex" is more than just an anti-freeze. It's a winter radiator conditioner. One filling does the job all winter long.

Last season more "Zerone" was sold than any other anti-freeze

Introduced to the motoring public only seven years ago, more "Zerone" anti-freeze is purchased today than any other brand. Why? Because "Zerone" is both efficient and economical. Surprisingly little is needed for safe protection.

"Zerone" is stable. Replacements under average conditions are small. "Zerone" improves heat transfer—keeps clean cooling systems free of rust and corrosion.

Order your supply of "Zerone" and "Zerex" from your jobber today.



WINTER SERVICE FOR THE COOLING SYSTEM

(Continued from page 19)

Hose connections, due largely to the action of water and heat, swell and rot, with particles depositing in the cooling system. In some cases the hose connections collapse from the water pump suction, causing restricted circulation and the resultant overheating. Air entering the cooling system through leaking hose connections or a leaking water pump increases the rust and corrosion action.

An outstanding cause of trouble, particularly in the present day high compression engines, is the presence of exhaust gas in the cooling system solution. This is due to leaking cylinder head gaskets, and is usually caused by distortion of the head or block because the head bolts are not drawn down uniformly. A new head gasket, installed with a good gasket sealing compound, and tightened under

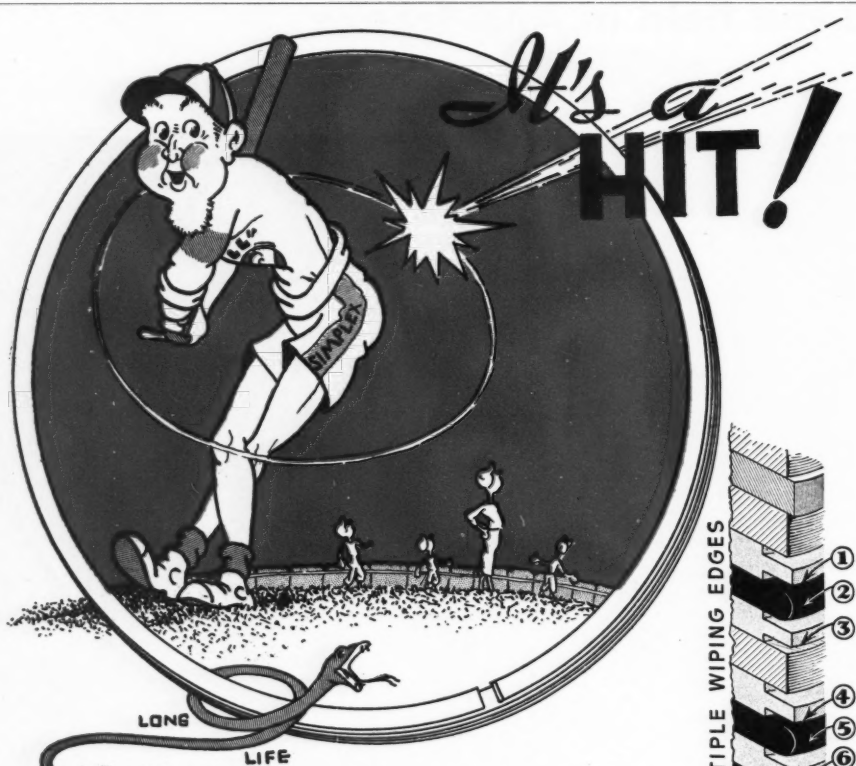
the head with the use of a tension wrench, will usually correct this condition. A test for this trouble should be made on all late model cars to be sure it does not exist, before anti-freeze is added to the cooling system.

A simple test can be made by disconnecting the upper radiator hose at the radiator, and disconnecting the water pump either by removing the fanbelt (if the fan shaft drives the water pump) or by disconnecting the generator shaft. Hold the hose up so that it will serve as a stand-pipe, and then speed up the engine and watch the water level in the hose. If it rises under increased compression, and drops to its regular level when the engine drops back to idle, or if bubbles appear, it is an indication that the head gasket is allowing compression to leak out into the cooling system.

Water leaks contribute their share of trouble, and of course have to be corrected before an anti-freeze solution can be used. Water pumps, head gaskets, side plates, hose connections, expansion plugs and the radiator itself should all be subjected to a careful examination, and the necessary corrections made.

Thermostats should be checked for two conditions: first, to see that they operate properly without sticking, and second, to see that they open at the proper temperature according to the type of anti-freeze solution used. The first condition can be detected by placing the unit in a bucket of boiling water and observing the action. If it opens smoothly without jerking, and closes smoothly when removed from the water, it is in good condition. If it does not, it should be replaced. The second condition can be detected by placing the thermostat in water, along with a thermometer. Heat the water and observe the temperature at which the thermostat valve starts to open. The standard equipment thermostat in the majority of late model cars is calibrated to open at about 150 deg. F. To secure normal engine operating temperature during the winter, and to derive benefit from the hot water heater, the engine temperature should be maintained at 160 deg. or higher. Thermostats for winter operation should start to open at about 160 deg. Some units, particularly the hose line type, are adjustable and the same unit can be made to operate for both summer and winter temperatures. Others, usually the block type, are not adjustable, and will have to be replaced to obtain the desired temperature operation.

Cleaning the cooling system is a job that requires careful attention to all the above points. The operation (Continued on page 74)



FROM the first time up the Simplex "LL" Ring has been making real hits, with remarkable regularity, all around the circuit.

"LL"'s record for the first season, has been nothing less than sensational—the find of the year.

"LL" leads the league in number of hits; long drives; stolen bases; assists and circuit clouts — and with a perfect record.

"LL" is a great short-stop — nothing gets by — stops oil and blow-by in their tracks.

"LL" is also a real pinch-hitter and clean-up man, putting you so far in the lead there is no chance for a ninth-inning come-back.

Join up with a real fence-buster and get your share of the world's serious money. Call your near-by Simplex Distributor for full information and details.

For quicker seating and longer life, segments of different degrees of hardness are alternated in the groove. The softer, deeper segments wear down while the ring is seating, protecting the cylinder wall. The tougher, hardened sections carry-on after the seating, for long life.

SIMPLEX PRODUCTS CORP.
3820 Kelley Avenue • Cleveland, Ohio



SIMPLEX "LL" PISTON RINGS

Do a better job — give 'em "LL"!

AUTO-LITE HELPS DEALERS SELL PLUGS

READ WHAT THESE DEALERS SAY ABOUT AUTO-LITE'S NEW MERCHANDISING PLAN

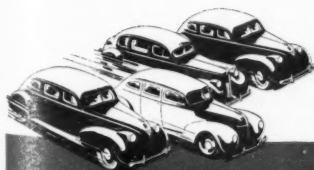
Enthusiastic dealers report big increases in volume when they switch to Auto-Lite Spark Plugs. It's an actual fact—*no other new spark plug ever sold so fast before.* And Auto-Lite's policy assures real profits. You get a full mark-up on every sale.

Here's a spark plug—and the *only* spark plug—that's "ignition engineered by ignition engineers." Auto-Lite engineers design and build complete ignition systems for the world's finest cars.

Mechanics say spark-weary engines take on new life when Auto-Lite Spark Plugs go on the job. Customers stay happy because this new kind of spark plug helps get quicker starting, smoother performance; restores pickup and gasoline economy.

Get the details about Auto-Lite's spectacular merchandising helps like the "Parade of Stars" with an amazing movie theatre tie-in...a new "Premium Plan" that builds volume fast..."Auto-Lite on Parade," an entertaining movie packed with selling action. Your jobber can tell you about these and other sharp selling tools that will get you more volume, bigger profits. Ask him right now.

THE ELECTRIC AUTO-LITE COMPANY
Merchandising Division
TOLEDO, OHIO SARNIA, ONTARIO



STANDARD EQUIPMENT ON
1 OUT OF EVERY 4 CARS BUILT

MY CUSTOMERS
WANT THE BEST.
THAT'S WHY I SELL
AUTO-LITES AND
PLENTY OF 'EM

MY SPARK PLUG
PROFITS SHOT UP
LIKE A SKYROCKET
WHEN I PUT IN
AUTO-LITES!

I PUT NEW
AUTO-LITES IN ALL
MY "TUNE-UP" JOBS.
THEY SURE MAKE
A DIFFERENCE!

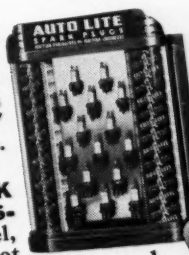


THESE TWIN SALESMEN REALLY SELL PLUGS

Revolutionary New "ZIRAMIC" SPARK PLUG CLEANER. The only cleaner with air control that cleans all sizes of plugs without adjustment. 19" high, 9 1/4" wide, 9 1/4" deep.



Sensational SPARK PLUG MERCHANDISER. Beautiful, all-steel, walnut-grained cabinet with chrome-plated center panel. 19" high, 13 1/2" wide, 7 1/2" deep.



IGNITION
ENGINEERED
BY IGNITION
ENGINEERS

AUTO-LITE SPARK PLUGS

WINTER SERVICE FOR THE COOLING SYSTEM

(Continued from page 72)

itself is divided into two major parts, and consists of cleaning the radiator and the block. It is a waste of time and money to remove the radiator and clean it out carefully, without also cleaning the cylinder block. Rust deposits and other sediment which collect in the water passages of the block will be picked up by the water circulation and carried to the radiator so

that it will become clogged again, and the job will have to be done over.

There are several cooling system cleaning compounds on the market which do a good job, and care should be taken to follow the manufacturer's instructions carefully.

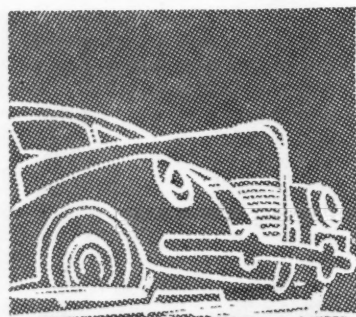
When it comes to flushing the system, the radiator and block should be flushed separately. A pressure

gun is needed so that water backed by air pressure can be used to force out any sediment that will not drain out naturally. The radiator should be flushed in the reverse direction to normal flow—in other words the flushing should be done from the bottom to the top so that the sediment will be washed out through the filler neck. The block likewise should be flushed in the reverse direction to normal flow—by inserting the pressure gun in the upper water outlet connection so that the sediment will be washed out the lower connection.

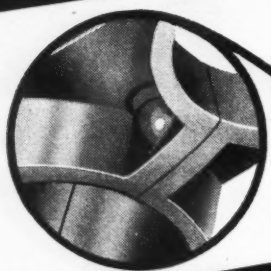
If a similar procedure to that outlined is followed, all but the most severe cases of clogging will yield, and further cleaning will be unnecessary. In extreme cases of radiator clogging it is sometimes necessary to remove the top and bottom radiator tanks from the core and clean out the water passages with a strip of steel.

When it comes to actually installing the anti-freeze solution selected, there are two major points to be checked, aside from seeing that protection is provided for the expected temperatures. The first of these is the danger of air pockets forming in the block as the solution is poured in. If they are allowed to form, the system will not have sufficient solution to fill it, and steam pockets will form. Always run the car after the system appears to be full so that the temperature of the system will reach the point at which the thermostat opens. This will allow any trapped air to escape, and more water or anti-freeze can then be added to insure adequate circulation.

The second point is the danger of over-filling. Water as well as anti-freeze solutions will expand when heated, and allowance must be made for this expansion to prevent the level rising to the point where it will pass out the overflow pipe. Always check the water level when the engine is at normal operating temperature. It should be just visible through the filler neck, indicating that it covers the top of the radiator core, and should not fill up into the neck. It must be remembered that in addition to the normal expansion which takes place at normal operating temperatures, this expansion is increased after the car is stopped. The temperature rises sometimes as much as 20 deg. when the engine is cut off, and this added expansion means that the level will rise and, if the system is too full, some of the solution will pass out through the overflow tube. This condition is known as "after boil," and is responsible for considerable solution loss with low boiling point anti-freeze solutions, when there is no apparent cause.

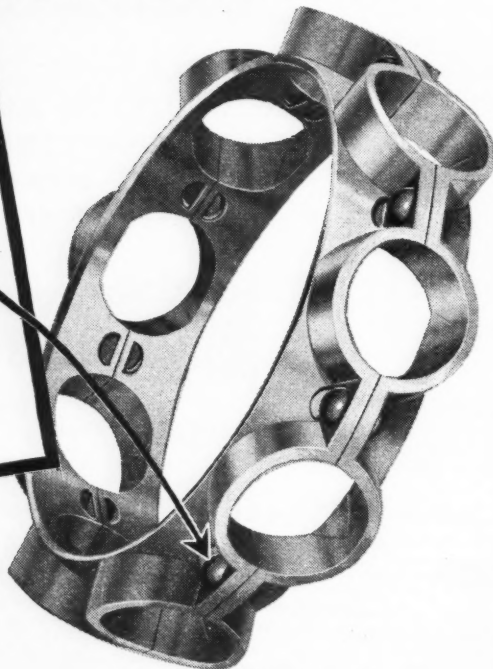


1. Cool-Running
2. Extra Strength
3. Free-Rolling
4. Land-Riding



PROTECTION for Life-Long Service!

That's what you get in McGILL Precision Ball Bearings . . . and at reasonable first cost! With ball retainers made of special McGILL Bronze, there is less resistance to the steel balls—less friction. They're cool-running, too, for the special McGILL Bronze Retainers dissipate heat more quickly. For all-around service and satisfaction for new equipment or replacements, always specify the bearings which good mechanics prefer — McGILL PRECISION BEARINGS!



Order from Your Jobber's Stock
McGILL MANUFACTURING CO.
1600 North Lafayette Street VALPARAISO, IND.

**BEARING
DIVISION**

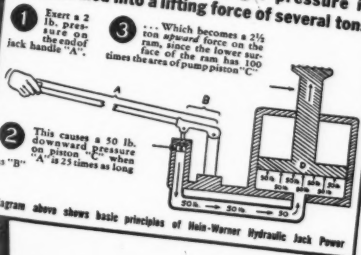


Buyers of 1941 cars and trucks are hot prospects for these super-powerful, easy-operating HEIN-WERNER HYDRAULIC JACKS

Stock up NOW
for plus profits



HERE'S WHY H-W HYDRAULIC JACKS are easier to operate
In a split-second, mere finger pressure is transformed into a lifting force of several tons



A large percentage of all trucks and passenger cars are sold *without* being equipped with *any* type of jack—and many of those that do have a jack included as standard equipment *do not* have a sturdy, dependable, easy operating hydraulic jack such as is made by Hein-Werner.

This complete line includes 1 1/2 ton capacity hydraulic jack at only \$2.80 ... 2 ton model, \$2.95 ... 3 ton model, \$6.95 ... 5 ton, \$8.95 ... 8 ton, \$11.75 ... 12 ton, \$17.50 ...

20 ton, \$30.00. (All prices are net to dealer, and slightly higher on West Coast).

Hein-Werner also makes Bumper-Lift Hydraulic Jacks for passenger cars, and a full line of Service Jacks of 1 1/4, 1 1/2, 2, 3 and 4 tons capacity. Also SAFE-T's.

Ask your H-W Jobber for details—or write us

Hein-Werner Motor Parts Corp.
Waukesha, Wisconsin

How To Win a Mileage Marathon

Each year at their annual picnic the engineers of the Shell Oil Company's Research Laboratory have a lot of fun with a contest which they call the Mileage Marathon. Last year R. J. Greenshields succeeded in covering a distance of 27 mi. in a '33 Plymouth with 2055 c.c. of regular grade fuel, thus averaging 49.7 m.p.g. with an engine of 201.3 cu. in. displacement. Some of the tricks used to obtain this phenomenal mileage were rather ingenious. The well-known fact that an engine in a warmed-up condition gives

the best mileage was utilized by shielding the radiator, crankcase, and transmission and employing an exhaust heater on the differential. Rolling friction was reduced by inflating the tires to 50 lb. pressure. Radiator fan, water pump and generator were disconnected to conserve the horsepower required to operate these auxiliaries. Distributor and carburetor were adjusted to optimum settings of spark timing and air-fuel ratio.

In the first mileage marathon held in 1939, some 20 persons from the

laboratory took part, driving their personal cars and averaging, as a group, 29 m.p.g. A closed route of 14.1 mi. was specified for the race and each entry was given an allotted amount of gasoline according to the weight of his car.

This year the men competed in a similar contest and the record of 55.7 m.p.g. was obtained in a Ford V8 of 221 cu. in. displacement. The distance covered on 2115 c.c. of gasoline to win was 31.1 mi. The average for the entire group of 20 cars was 37 m.p.g. F. B. Baggerman, although using some of the means already mentioned to reduce rolling friction and increase the economy of his engine, introduced a new technique. Realizing that minimum specific fuel consumption of an automotive engine is at intermediate speed and nearly full load, Baggerman accelerated from 16 to 37 m.p.h. at full throttle and then with the ignition off coasted down to 16 m.p.h. before he repeated the cycle; thus the engine was operating at nearly minimum specific fuel consumption all of the time it was running. The car speed of 16 to 37 m.p.h. was a judicious compromise between the engine speed for greatest economy and the power used in overcoming wind resistance at high car speed.

Already the engineers are looking forward to the marathon of 1941. It is planned to broaden the contest and allow fuels of any desired composition to be used in the race.

Window Regulator Repair Kit Offered

One of the newest additions to the line of time-saving items made by Champ Items, Inc., 6191 Maple Avenue, St. Louis, Mo., is the No. 994 window regulator repair kit assortment



ment consisting of 12 kits of repair window lifts on Ford, General Motors and Chrysler cars. Each kit contains all necessary parts and instructions to repair the old regulator.

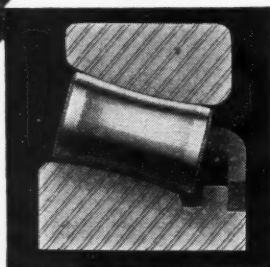
Exide Building K. C. Plant

The Electric Storage Battery Company has started construction of a manufacturing plant in Kansas City, Mo. The site is on ground adjoining their present warehouse at 129 Belmont Boulevard.

NOT JUST ANOTHER ROLLER BEARING



All inner bearings are furnished with Grease Seal. Wrapped in oil-paper and packed in individual cartons.



Exclusive concave-convex roller design—no other bearing has it!

Amazing Performance on FRONT WHEELS, DIFFERENTIALS AND REAR AXLES

• At first glance, this Link-Belt bearing may look like other roller bearings . . . but look closer and you'll see a mighty big difference. Its concave roller surface prevents binding—assures longer service. And, when you try a set on your next job, you'll appreciate what its exclusive features mean in improved performance.

Ask your jobber to explain this bearing to you . . . ask him particularly why it is a better bearing for front wheel service. Get the facts today!

Made by the makers of the famous Silverstreak Silent Timing Chain!



LINK-BELT COMPANY
519 N. Holmes Ave., Indianapolis, Ind.
Warehouses in all principal trading centers

LINK-BELT SHAFTER ROLLER BEARINGS



TIME TESTED

**McQUAY
NORRIS**

**AUTO
PARTS**

PROVEN IN SERVICE

McQUAY-NORRIS
ALUMINIZED
Factory Type Set
PISTON RINGS

12-3/4x14CMP
8-3/4x14 OIL
81 FOR CYLS.
STD. no. 005

McQUAY-NORRIS
ALUMINIZED
Engineered Seal
PISTON RINGS
WITH
Super-X
EXTRA OIL
205 FOR CYLS.
000 to 009

"SERVICE STATION ON THE AIR"

By **ALLAN P. GARDNER**

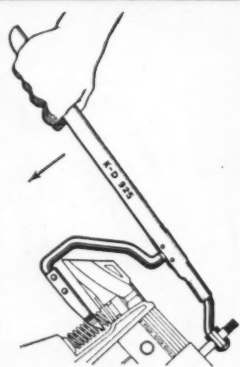


• YOU MAKE MORE PROFIT

when You use These Time-Saving K-D Tools

THE NEW

NO. 925 GUIDE REPLACING TOOL



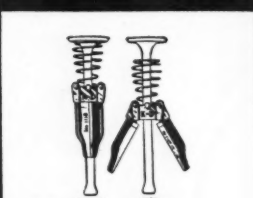
VACUUM VALVE GRINDERS



• **NEW! 925 Guide Replacing Tool.** For replacing valve assemblies in Lincoln-Zephyr, Mercury and Ford V-8-85 . . . not for removing them. In place as shown, downward pressure on handle pulls guides down, allows easy installation of guide retainer.

• **Vacuum Valve Grinders.** For hand operation. Rubber suction cup grips valve head, metal retaining ring keeps it on head. No. 503 has 1 3/8" cup. No. 865 has 1 1/16" cup.

VALVE GRINDING BUSHINGS



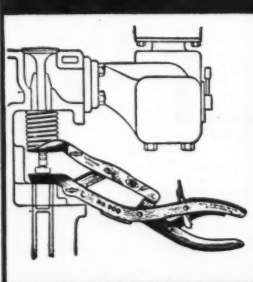
• **Valve Grinding Bushings** for Ford-built motors. Used in place of guides when grinding and when establishing stem clearance. One piece, accurately machined. No. 1118 for Lincoln-Zephyr, Mercury and Ford V-8-85. No. 1160 for Ford V-8-60. No. 511 for Ford A & B.

• **Valve Guide Pullers.** Get right in there and pull straight up, removing the tightest guide assemblies without damage or delay. No. 920 Set for Ford V-8-85, Mercury and Lincoln-Zephyr. No. 860 Set for Ford V-8-85.

VALVE GUIDE PULLERS



900 "HI-OFFSET" LIFTER



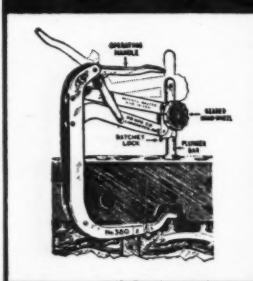
• **900 "Hi-Offset" Lifter.** For under-fender operation on late L-head motors. Auxiliary jaws when needed for extra-high lift. Only 8 3/4" long.

• **605 Keeper Insertor.** Installs nearly all split valve keepers. Easy to load, self-supporting on valve stem.

605 KEEPER INSERTER



380 COMPRESSOR



• **380 Compressor.** For most motors, old or new, L- or valve-in-head. Sturdy and simple, requires only one man to operate. One pair straight and one pair offset jaws.

K-D

MANUFACTURING CO.
LANCASTER, PA., U.S.A.

CANADIAN FACTORY
HAMILTON, ONTARIO

CAR owners and little boys ask a lot of questions. In the past 20 years J. B. Overton, service manager for Nixon Butt Motors, Inc., Packard and Pontiac dealer, Orlando, Fla., has been answering many of them. Recently when Overton and his boss decided to boost business in the service department during the in-between-season slow business lull, they chose as their advertising medium a questions and answers program over the local radio station.

To get ammunition for the broadcast, which they labelled, "THE SERVICE STATION OF THE AIR," the initial program featured an introductory talk by Butt, and an invitation to car owners to mail to him or the station any questions concerning their car and its operation they wanted answered on the next broadcast.

During the week preceding the next broadcast, 20 letters were received from listeners. Out of this number, the five most frequently asked questions are selected, as five questions are as many as can be answered in the short broadcast.

A young lady in the Butt organization who has a good radio voice reads the questions and Overton reads the answers. Other questions sent in and not answered over the air are answered by mail or telephone the next day following the broadcast.

Before signing off, Overton suggests that listeners having car trouble, regardless of whether or not they have written him about it, drive around to the Nixon Butt service department for a free inspection and estimate if repairs are needed. During the two months the program has been on the air, Overton estimates that 50 per cent of car owners who have written him, and approximately five new customers each week, come to his shop for the inspection and estimate. A large percentage of this number leave their cars to be worked on.

"We chose our time on the air," Overton said, "to catch the family at dinner. In this way our program reaches most of the car owners at the best time of the day. They can decide on what's to be done about that 'ping' in the motor before they leave the dinner table."

Overton figures that you can't sell a man service for his automobile, especially a new customer, unless you can convince him that minor repairs and adjustments, delayed too long, may cost him a lot of money later. You must get him into your shop, when you make an offer of free inspection and estimate, assure him that he isn't going to be "high-pressured"

(Continued on page 81)

WRITE FOR YOUR FREE COPY OF K-D'S NEW CATALOG



"Haven't you
anything fresher
than canned oil?"

Chicago Show Ready

"Non-Stop America" will be the title of the spectacle featuring the 41st annual Chicago Automobile Show to be held October 26 to November 3 in the International Amphitheatre, under the auspices of the Chicago Automobile Trade Association.

The stage performances each afternoon and evening will dramatize the amazing change in cars and automobile shows since the dawn of the century, to the accompaniment of pretty girls, singers and dancers.

On the Air

(Continued from page 78)

into a big repair bill. And, that your offer means just what it says—"free inspection and estimate" regardless of where the work is done later.

The shop is completely equipped, and has a number of special tools. "This in itself," Overton says, "is one of our best selling arguments. Our tools do a lot of talking for us. We've found it to be better to send out extra special, or heavy, machine tooling, rather than tie up money in certain equipment for which we have minimum use and requiring a full-time skilled operator. Otherwise we're fully equipped and staffed for handling any type of repair or rebuilding job."

Asked whether the radio program would be a regular full-time feature of the agency's sales and promotional strategy, Overton said he hoped it would. "Our average of 20 letters weekly will, I feel sure, increase as the program increases in popularity," Overton said. "The station also receives a number of letters and telephone calls favorable to extending the program. Then, since we are also a car agency, the service program provides the car salesmen with an opportunity to swing into action. This, of course, is not the primary purpose of the program, but the salesmen have sold some cars, and picked up good prospects for future sales, as a direct result of the program. I believe it is going to be a permanent feature in our organization."

Truck Show Banquet

"Highway Transportation Contributes to National Defense" will be the topic discussed by nationally prominent speakers at the seventh annual National Motor Truck Show, Inc., banquet Oct. 15 at the Commodore Hotel in New York, and at the Court of Peace program which will feature National Highway Transportation Day at the 1940 New York World's Fair, it was announced today by John F. Winchester, president of the motor truck organization—sponsors of the National Highway Transportation Exhibit in progress at the World's Fair.

**Cash-in on tune-up work
the sure easy way!**

**ELIMINATE GUESSWORK
BY USING A**

Shurhit

**STROBOSCOPIC
ANALYZER**

Tune-up service is big business . . . it's profitable business—and with an amazingly small investment it's a major service you can add to your present business. Greater mileage per gallon of gas, and peak performance under all conditions are factors which appeal to car owners, and it has been proven that dealers can sell tune-up service, and make real money, providing they use modern equipment such as a Shurhit Stroboscopic Analyzer.

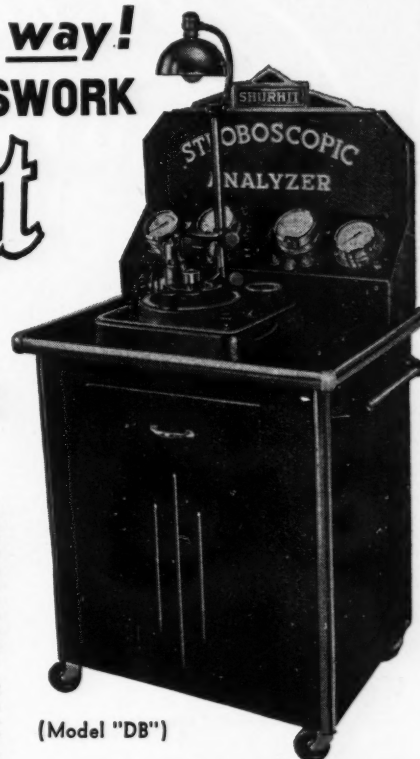
What others are doing, YOU can do. For example, take the experience of Jack Warren of Warren Automotive Co., Milwaukee. Mr. Warren writes—"The Shurhit Stroboscopic Analyzer does pay for itself in dollars and cents, and it has increased our tune-up business to an unbelievable extent in a short period of time. . . We are selling four to five times as many ignition repair parts now compared to what we were selling before we purchased our Stroboscopic Analyzer."

YOU, too, can really go to town with a Shurhit Stroboscopic Analyzer. It takes all the guesswork out of tune-up service and enables you to quickly and easily turn out jobs that are 100% accurate.

**Learn how you can get Shop Tools
and Equipment FREE. Offer ex-
pires Oct. 20, 1940.**

Write for details

**CLIP and MAIL
COUPON TODAY**



(Model "DB")

**ONLY \$11.00
a month**

The Shurhit Stroboscopic Analyzer accurately discloses the true condition of the distributor, as well as the coil and condenser, if the coil on the car is used. It also shows presence of worn bearings, worn shaft, or both; rough cam, uneven cam, weak contact springs, poor condition of contacts, improper spacing of contacts, as well as the performance of the coil and vacuum spark modifier in coordination with governor advance. This equipment enables you to detect trouble, make corrections, check your work and profitably merchandise tune-up service. It also helps sell ignition parts—thus showing you double profits.

**SHURHIT PRODUCTS, Inc.
Waukegan, Illinois**

☐ How can I get equipment FREE?

☐ Send details on Model "DB."

SIGNED

FIRM NAME

ADDRESS

CITY..... STATE.....

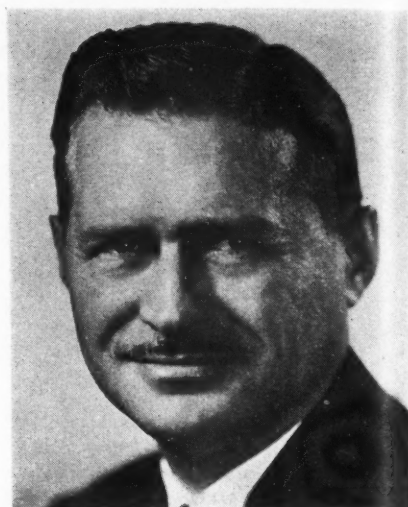
NAME OF JOBBER.....

AUTOMOTIVE MEN

Ralph De Palma, former ace racing driver, who, since the last war, has devoted a good many years to aviation problems, has joined the board of experts on the staff of the National Aeronautics Council. The Council was recently organized chiefly for the purpose of training young men and women for aviation careers, preparing them by mail for subsequent practical flying instruction at Government or private flying schools; also preparing

for the many jobs on the ground connected with aircraft and transport industries.

Chicago Pneumatic Tool Co. announces the appointment of P. J. Christy as manager of their Philadelphia office. He succeeds A. M. Brown, who has been transferred to Washington, D. C., as manager of the new branch recently opened there. C. A. Diehl has been named manager of the Houston, Texas office.

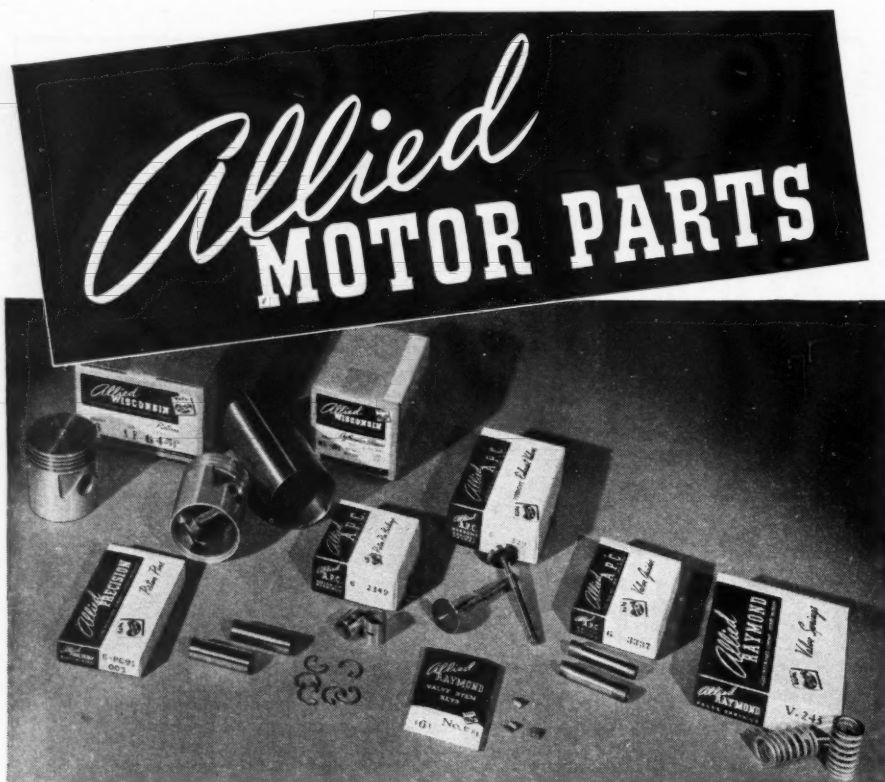


Wilbur Shaw

Announcement of the appointment of Wilbur Shaw, three-time Indianapolis winner, as manager of the aeronautics division of The Firestone Tire & Rubber Co. was made by Lee R. Jackson, vice-president in charge of sales.

Marvin E. Coyle, general manager of the Chevrolet Motor Division and a vice-president of General Motors Corp., in ceremonies at the New York World's Fair received the Goodrich Award for "distinguished public service." In presenting the award in recognition of Coyle's "valuable service to the country in the important field of transportation," John L. Collyer, president of the B. F. Goodrich Company, cited him as a man who "typifies the opportunities afforded in our nation to ambitious and deserving youth."

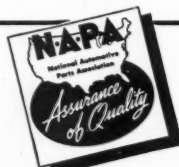
C. C. Coddling has been appointed West Coast manager for Crosley automobiles, with headquarters in Los Angeles.



The engineering resources and manufacturing facilities behind Allied Motor Parts lines are devoted to making each product the finest that can be had—an achievement confirmed by NAPA's "Assurance of Quality."

Allied offers you the added convenience of one friendly and cooperative source of supply on motor parts for all cars, listed in one comprehensive catalog. Complete master stocks in 38 NAPA warehouses insure fast service on all numbers . . . See your nearest NAPA jobber.

★
Pistons
Piston Pins
Piston Pin Bushings
Piston Pin Set Screws
Piston Pin Lock Rings
Valves
Valve Keys
Valve Guides
Valve Springs
Expansion Plugs
Cylinder Sleeves
Cylinder Sleeve Assemblies



ALLIED MOTOR PARTS COMPANY • DETROIT



American Chain Division district sales managers show intense interest as a new chain is explained to them by W. D. Kirkpatrick, vice-president, American Chain and Cable Co., Inc. Reading from left to right, in the picture, are—A. M. Tinker, Boston; J. J. Thiebauth, sales manager, automotive accessories; W. M. Cusack, Detroit; R. C. Brenizer, Philadelphia; W. F. Cotter, New York (seated); W. D. Kirkpatrick, W. C. Perkins, Pittsburgh; R. E. Greenwood, Chicago.

U.S.A. Says "O.K."

PLYMOUTH FOR '41 HAS THE LOOKS,
THE POWER, THE VALUE THE PUBLIC WANTS!

Do you mean to tell me that's a **LOW-PRICED** car? Look at those Lines, Helen!

Plymouth's always Big, too, and that new **FASHION-TONE** Interior is Something

Wait till you see the Convertible, Uncle George. It'll make you feel young again — no fooling!

Howard, Look — that's the car I was telling you about! Isn't it stunning?

This new **POWERMATIC SHIFTING** sold me, Mac. Of course, Louise fell for the **NEW STYLE** and two-tone **UPHOLSTERY**!

All I can Say, Doc... is you **BOTH** Got a Great buy! How is she on Pick-Up? I hear they're peppier than ever!

It's the Doctor, Martha... that **MAKES 3** of our friends who've switched to Plymouth!

Gee, I wish I could ride around in a Car like that!

Do you know, Henry... It's time we **DID** have a **BETTER CAR**! Our Budget will easily take care of it this year!

Gosh, Dad, if we had a car like that, I'd wash it every week for **NOTHING**! Look at it **SHINE**!

PLYMOUTH
THE "ONE" FOR '41

IT'S A "POWERHOUSE" TO DEMONSTRATE!

IT'S THE "ONE" for '41... in looks, in power, in performance! Everywhere this 1941 Plymouth is being judged the greatest car in Plymouth history. Dealers report tremendous public demand.

It's a great car to show—even better to demonstrate! New 4-way step up in performance—new Powermatic Shifting—Fashion-Tone Interior—make it wonderful to ride in and to drive!

Outside, inside, this great new Plymouth (117" wheelbase) reflects outstanding quality—CLASS! Plymouth Division of Chrysler Corporation.

AND ALSO FOR 1941—the Greatest Value in a Commercial Pick-Up in Plymouth History, and the Most Brilliantly Styled Panel Delivery in the Industry!

AUTOMOTIVE MEN

Earnshaw Kinley, formerly Eastern regional sales manager for Zaco Laboratories, Cleveland, has been appointed district manager for Leonard Spark Plug Co., Newark. Kinley will handle the Middle Atlantic territory, with headquarters in Philadelphia.

Fred W. Gross of Newark, active in the tire industry for more than twenty-two years, has switched to Wayne Pump Company, as sales representative in Northern New Jersey.

Appointment of A. W. Tacy as assistant sales promotion manager of Cadillac-LaSalle, was announced recently by D. E. Ahrens, general sales manager. Tacy succeeds J. W. Eberts, who has resigned to take a Cadillac-LaSalle sales agency.

Walter L. Brous has been appointed district manager for Crosley automobiles in greater New York, Pennsylvania, New Jersey, Delaware, Maryland, Virginia and West Virginia.



N. A. Moore



R. A. Beardsley

Announcement of the election of Raymond R. Beardsley as secretary and Neil A. Moore as vice-president of the Sealed Power Corporation, Muskegon, Mich., was made by the directors of the company recently. Both men are veterans in Sealed Power service. Beardsley succeeds his father, Paul R. Beardsley, who asked the directors to relieve him of some of his duties. The latter, one of the founders of the corporation, will continue to serve as treasurer. His son was formerly assistant secretary and treasurer, and has worked closely with his father for many years. Moore has been general manager of the corporation for the past four years.

Four new promotions resulting from Pontiac Motor Division's zone expansion program for 1941 are announced by D. U. Bathrick, vice-president and general sales manager of the division. They are effective immediately. Harry W. Bygel, Pontiac's used car manager for the last three years, goes to Denver as zone manager. He succeeds Dan O'Madigan, recently placed in charge of the Omaha zone. Bygel's place as used car manager will be assumed by Dale Vreedenberg. H. Gordon Hersh, sales promotion manager, moves to Memphis as assistant zone manager, a post newly created because of increasing business volume in that zone. He is succeeded as sales promotion manager by Paul R. Warmee, assistant sales promotion manager since 1936. William J. Miller, for several years a member of the sales promotion department, has been promoted to assistant sales promotion manager.

Continued expansion within the Kellogg Division of American Brake Shoe & Foundry Co., Rochester, N. Y., has made necessary the following additional personnel changes: H. O. Holland, formerly eastern district sales manager, has been transferred to Rochester as general sales manager. Curtiss Main, who formerly handled the Philadelphia territory, will now be transferred to the New York office, and will handle the New York district. Frank Wilson, Philadelphia, has been appointed district manager of the Philadelphia area, covering the state of Maryland, District of Columbia, southern New Jersey and eastern Pennsylvania.

BLUE STREAK
TRADE MARK REG. U.S. PAT. OFFICE

BATTERY CABLES

THIS NEW DISPLAY SELLS 'EM

THE QUALITY KEEPS 'EM SOLD

YOU'LL sell more battery cables when you give this new "Blue Streak" Merchandiser a prominent place in your establishment.

Skilfully designed to give full display to the beautiful three-color "Blue Streak" Battery Cable cartons, this smashing "spot" of color catches your customer's eye and turns his thoughts toward cable renewal.

You pay nothing for the Merchandiser—it's absolutely FREE with the Assortment illustrated or any of the similar new "Blue Streak" Assortments—all designed to give you maximum coverage for an extremely small investment.

The built-in quality of "Blue Streak" Cables keep them sold—and helps to boost your cable business through the word-of-mouth advertising of satisfied customers.

These special features make your selling job easy:

- Terminals and lugs attached to cable under tremendous pressure. Individually soldered for perfect electrical connection. Terminal extra heavy brass, lead-dipped. Grips insulation as well as wires.
- Lugs twice as heavy as ordinary types. "Center form" construction brings lug into position for bolting without twisting cable. Insulation of cable heavily lacquered.

From your jobber. Write us if he can't supply you.

MOTOR STANDARD PRODUCTS

By the Makers of "BLUE STREAK" and "STANDARD" IGNITION PARTS AUTOMOTIVE WIRE

STANDARD MOTOR PRODUCTS, INC.
Main Office and Factory
37-32 NORTHERN BLVD., LONG ISLAND CITY, N. Y.

RAISED BOLT
PLENTY
OF ROOM
FOR TOOL

STRANDS
TIGHTLY
GRIPPED

INSULATION
SNUGLY HELD

SECURELY
SOLDERED

"The ABILITY to serve well is as important as the WILL to do so."



In Winter especially
**It isn't the cost
 it's the upkeep**

ALL too often, when temperatures go down, *upkeep* goes up.

Why? Because, in many cases, the oil and lubes in the car *don't* start flowing instantly as soon as the engine starts. The results: metal to metal contact, and sooner or later an unexpected repair bill.

Play safe. Use and recommend Wolf's Head *Winter* Motor Oils and Lubes—specially refined to insure the famous Wolf's Head performance, in starting and driving, even in the most severe winter weather.

The particular quality of Wolf's Head makes such a vast difference in the upkeep of an automobile that Wolf's Head can guarantee the car buyer against repair bills on lubricated parts during the first 30,000 miles.

As an aid in closing new car sales . . . and in bringing customers back for regular service . . . the Wolf's Head Guarantee Plan is a time-proven success—in all seasons of the year, in all parts of the country!

More and more car owners are asking for and insisting on—Wolf's Head Oil and Lubes. If you're not already handling Wolf's Head, write today and get all the facts on this totally different motor oil proposition. Wolverine-Empire Refining Company, Oil City, Pa.; New York, N.Y.

WOLF'S HEAD *Winter* **MOTOR OILS AND LUBES**



35c

A QUART



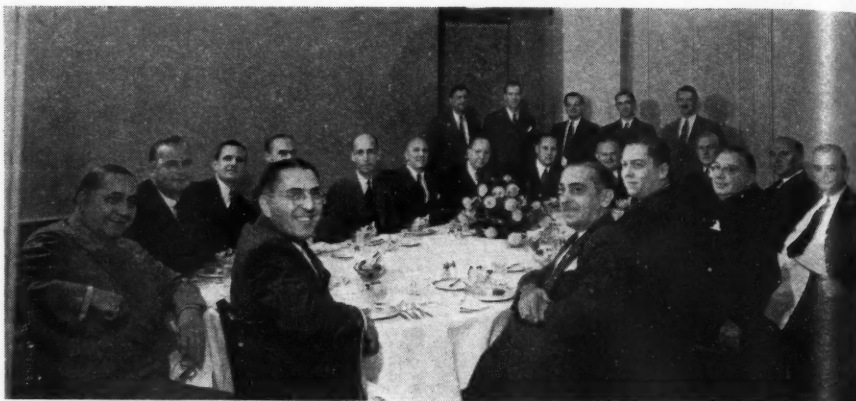
100% PENNSYLVANIA
 P. G. C. O. A. PERMIT No. 19

Grey-Rock Branch Men Attend Factory Conference

Grey-Rock territorial branch managers met with factory officials at the Grey Rock plant in Manheim, Pa., September 13-16, for their annual sales conference. The meeting was called by Franklin A. Miller, Grey-Rock sales manager, for a general discussion of advertising, merchandising, and sales plans for 1941.

The proposed program was outlined and discussed at large and this year's sales activities were reviewed.

A statement by Miller indicates



Puritan say:

"Wise man no gamble on hydraulic brake fluid. He play safe and use only Puritan, the good mixer."

Puritan is the genuine *refill* fluid. It makes no difference what is already in the system. You add Puritan with *complete* assurance, because it

MIXES WITH ANY AND ALL OTHER FLUIDS!

Developed on a Research Fellowship at Mellon Institute, Puritan is the most outstanding development in brake fluids since the introduction of hydraulic brakes. Puritan is non-gumming, free-flowing, self-flushing . . . Saves you time and trouble . . . Assures you of safe, satisfied customers and quick, easy profits . . . Ask your N.A.P.A. jobber salesman for the complete story on Puritan Hydraulic Brake Fluid.

Distributed Through



PURITAN COMPANY, INC.
ROCHESTER, NEW YORK



that although this year's sales of Grey-Rock products have broken all existing records by a wide margin, the 1941 campaign is expected to account for even further sales increases.

Automotive Men

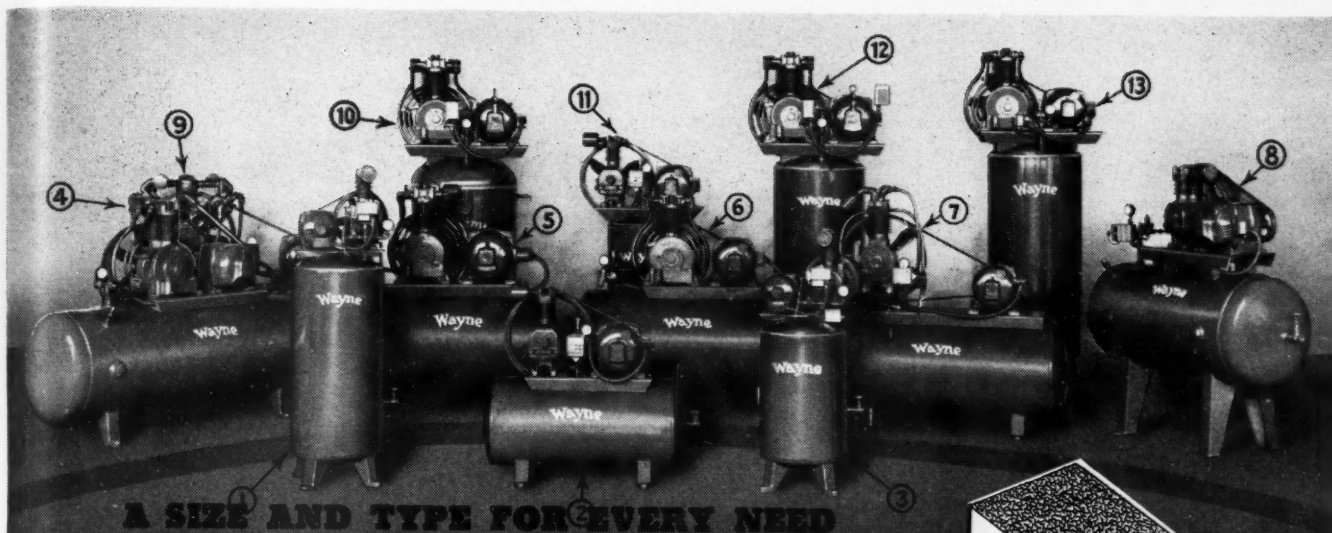
C. W. Seiberling, vice-president and co-founder of The Seiberling Rubber Co., has been designated leader of the 1940 Akron Community Chest drive, second oldest charitable fund of its kind in the United States.

Howard M. Hubbard has succeeded D. G. Millar as president of the Greenfield Tap & Die Corp., Greenfield, Mass. Millar is now chairman of the board, replacing Col. Frederick H. Payne, who resigned to devote his entire time to national defense as chief of the Hartford Ordnance District.

The creation of a fleet maintenance division has been announced by Frank A. Nealon, sales manager of the merchandising division of Electric Auto-Lite Co. Carroll A. McShane has been appointed to the post of fleet maintenance engineer.

The Bunting Brass & Bronze Company announces the appointment of C. W. Sweeney to have charge of the company's operations on the Pacific Coast, supervising the activities of the Bunting sale offices and warehouses in Los Angeles, San Francisco, and Seattle. Walter Gardner, who has been in charge of the Bunting warehouse in San Francisco for the last seven years, will assist Sweeney.

R. I. Petrie, vice-president and general sales manager, The Crosley Corp., announces the appointment of three division sales managers who will be in charge of sales in the Eastern, Western and Southern sections of the United States. N. C. MacDonald will be eastern sales manager with headquarters in New York City. B. T. Roe has been named western sales manager, with headquarters in Chicago. S. D. Camper has been appointed southern sales manager and will have headquarters at Atlanta.



A SIZE AND TYPE FOR EVERY NEED

20 Years
EXPERIENCE
BUILDING
COMPRESSORS

WAYNE

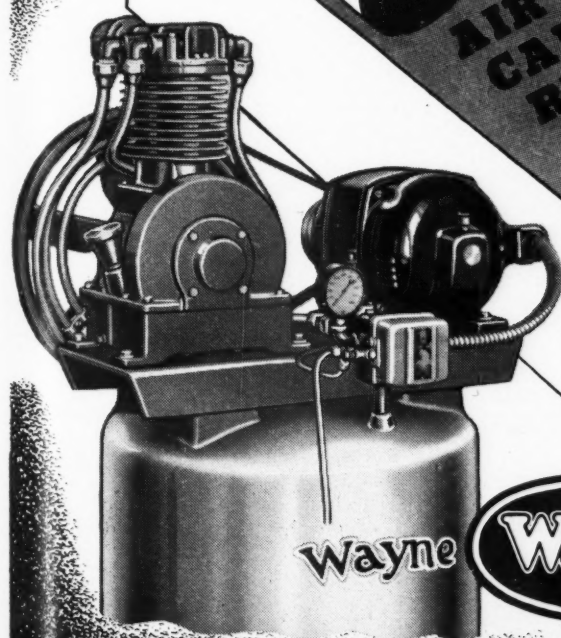
AIR COMPRESSOR SALESMEN
CAN HELP YOU SELECT THE
RIGHT UNIT FOR YOUR NEEDS

Scientifically

WAYNE salesmen specialize in
the sale of oily pumps, air compres-
sors, car washers and hoists. They
are trained to know each line thor-
oughly—and able to help you make
the correct choice to supply your
requirements efficiently at lowest cost.

**TERMS AS LOW AS
\$5 DOWN \$5 MONTHLY**

THE WAYNE PUMP CO., FORT WAYNE, IND.



Wayne **Wayne** Air Compressors

BACKED BY A NATION-WIDE SERVICE ORGANIZATION

Ford Presents Scholarships

Each of these eight state champion boy drivers won a \$250 scholarship award in the Ford Good Drivers League. They are shown with Edsel Ford, president of the League, on the stage of the Ford Playhouse in the Ford Motor pavilion at the New York World's Fair, where they received their awards from his hands. This event took place at the Champions Banquet, as the high moment in a week packed with thrills for the 48 boys from each state in the union, who had won the semi-finals in their own states.



TO ALL TIRE CHAIN DEALERS:



Dr. Irving P. Krick, of Krick Industrial Weather Service

THIS year, every Pyrene dealer will receive monthly 30-day forecasts, supported by flash warnings, predicting the weather in detail in advance from October to April. Krick Industrial Weather Service, forecaster to air lines and movie studios, will give dealers this chance to regulate stocks and protect their customers on the strength of accurate storm predictions! Smart, point-of-sale tie-up material free.

National advertising has made Pyrene Doubleduty Bar-Reinforced chains and Pyrene Standard chains known to everyone. There are none better. Every cross chain link is uniformly case-hardened to provide longer wear. Every link of side chain is tested for perfect welding. Pyrene road tests and rigid factory tests and inspection assure uniform quality. Sell sure safety when safety is needed. Use the storm "fore-warnings" furnished by Pyrene.

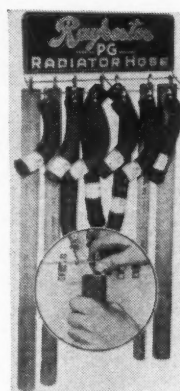


Get the complete story from your Pyrene Jobber today! —or drop a post card to Pyrene. The first weather reports covering October are ready to mail now. Don't be left out in the cold.



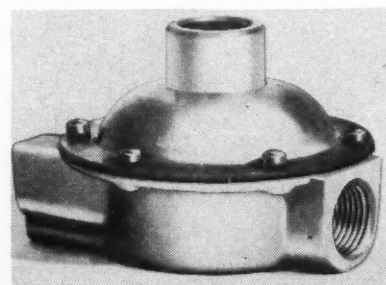
Radiator Hose Rack

A new quick-acting hose clip is now being used by the Raybestos Division of Raybestos-Manhattan, Inc., Bridgeport, Conn., on all its radiator hose display racks. This special feature enables the hose to be hung quickly and with little effort, merely catching the top of each piece in the individual, movable clip. This clip holds the hose firmly without damaging the surface. The display boards are supplied with a special deal including four pieces of straight hose and nine pieces of curved hose; also with the No. 12 curved hose assortment. Each curved piece of hose is marked with the names of the cars it fits.



B-K Check Valve

Bendix Products Division of Bendix Aviation Corp., South Bend, Ind., announces a new B-K check valve for use on vacuum power brakes. This new valve incorporates a large-area



flexible diaphragm upon which atmospheric pressure acts to force the valve upon its seat. It is said that the large area of this diaphragm increases the actuating force several times, and in this way insures positive, fast, leak-proof closing of the valve.

FIRST TIME

ever offered for
REPLACEMENT



Genuine



RING-TRUE BEARINGS

Here is the bearing that is used as Standard Equipment for popular makes of cars, trucks, tractors and buses. Now available to you through your jobber.

For better results, use Genuine Ring-True Bearings in your next job. Always replace bearings in sets.

*Complete Motor Bearing and
Connecting Rod Service*
CLAWSON & BALS, INC., Chicago

BEARING HEADQUARTERS

RING-TRUE'S BEARINGS

Complete CONNECTING ROD AND MOTOR BEARING SERVICE

FOR HEAVY DUTY ENGINES

LOOK FOR THIS DISPLAY IN YOUR JOBBER'S WINDOW

Development of Aviation Fuels Will Benefit American Motorists

Development of new-type fuels for aircraft already has indicated that once again progress along specific lines by the petroleum industry will have widespread benefits.

Potential recipient of direct benefits in this case is the motorist. Automobile motors are not yet designed or built to utilize the new aircraft fuels, but there are substantial grounds for belief that striking results will be obtained through their consumption in the cars of the near future. Experiments have demonstrated that with

the new fuels it will be possible to make wide increases in the compression ratios of automobile motors and thereby assure extensive advances in operating efficiency and economy.

Some of the new fuels are being obtained from new sources and by new processes developed within the past few years. Production of these fuels in quantity has given this country world leadership in the field. With some of the new fuels a transport plane's fuel load is reduced 1200 lb., thereby increasing cargo-carrying capacity by a like amount and passenger capacity by seven persons.

Grind Valve Seats WITHOUT STRETCH OR STRAIN!

with
VAN DORN'S
New Angle
**VALVE SEAT
GRINDER**



Van Dorn's sensationally New Angle Vibro-Centric Valve Seat Grinder makes it easy to grind those usually hard-to-reach "back" valve seats under alligator hoods! The secret's in the angle, power and longer length of the driving head—which take all the fatigue out of what's ordinarily a tough job. Coupled with this new feature, Van Dorn's Vibro-Centric Valve Seat Grinder automatically "lifts" every revolution to prevent the stone from loading up. You can accurately recondition cast iron seats in 5 to 8 seconds, alloy steel inserts, 5 to 15 seconds, Stellite inserts in 5 to 15 minutes. Handles all passenger car, truck, bus, tractor and Diesel valve seats. Ask your jobber for a demonstration of Van Dorn's New Angle Vibro-Centric Grinder or the Standard Vibro-Centric Grinder for popular cars and light trucks—or write to Van Dorn Electric Tools, 727 Joppa Road, Towson, Md.



"Van Dorn"

(DIV. OF BLACK & DECKER MFG. CO.)

THE "RED HEADED" PORTABLE ELECTRIC TOOLS



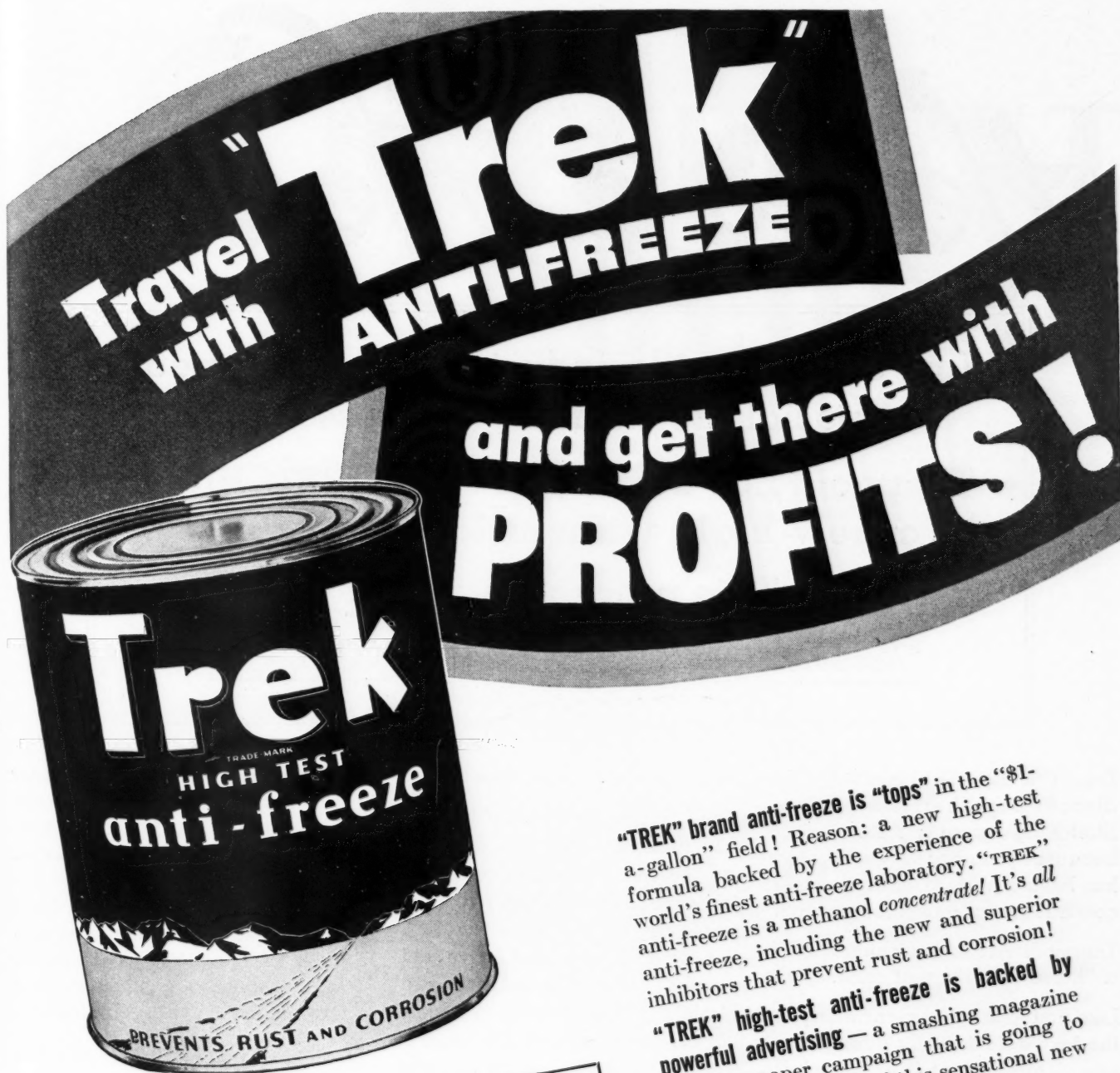
"Did you lock the car?"

Theodore F. MacManus

Theodore F. MacManus, whose writing genius was largely dedicated to the automotive industry, died Sept. 12, less than a month after he had been persuaded by Joseph W. Frazer to emerge from retirement and act as personal advertising counsel for Willys-Overland Motors, Inc. He succumbed to pneumonia in his summer home at Sudbury, Ontario, Canada. His signature appeared posthumously in the first announcement of the 1941 Willys' product, appearing in a national magazine two weeks after his death. During his notable career, "T. F." presided at the advertising birth of such notable motor cars as Cadillac, Dodge, Chrysler, Plymouth and DeSoto, and such great motor car utilities as Fisher Body. He is most widely known in advertising circles as author of the classic "Penalty of Leadership" for Cadillac, and the "Body by Fisher," with Napoleon coach, which identifies that company. Among scholars he was known for his poetry and his treatises on the Catholic Church, of which he was a devout member.

Book on Blue Print Reading

A new book "Simple Blueprint Reading, with Special Reference to Welding" has been published by The Lincoln Electric Co., 12818 Coit Road, Cleveland, Ohio. This book affords a basis for study of blue print reading which, together with practice in the actual reading of drawings, will guide the student to proficiency in this important subject. While the book has been compiled and published primarily for welders, it contains information of value for anyone concerned with mechanical construction. Copies may be obtained from the Lincoln Electric Co. at a cost of 50c. per copy.



HERE'S THE ANSWER! When your customers ask you the difference between "TREK" anti-freeze and "PRESTONE" anti-freeze, tell them that both are made by the same manufacturer, but they contain *entirely different chemical ingredients*. "TREK" anti-freeze is "tops" in its field, but do not confuse "TREK" anti-freeze or any other "dollar-a-gallon" brand with "PRESTONE" anti-freeze. *One shot of "PRESTONE" brand anti-freeze lasts all winter.*


"TREK" brand anti-freeze is "tops" in the "\$1-a-gallon" field! Reason: a new high-test formula backed by the experience of the world's finest anti-freeze laboratory. "TREK" anti-freeze is a methanol concentrate! It's all anti-freeze, including the new and superior inhibitors that prevent rust and corrosion!

"TREK" high-test anti-freeze is backed by powerful advertising — a smashing magazine and newspaper campaign that is going to drive home the story of this sensational new anti-freeze.

A full kit of dealer sales helps identifies your place of business as headquarters for "TREK" high test anti-freeze. Stock up now!

A PRODUCT OF NATIONAL CARBON COMPANY, INC.

NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation  General Offices: New York, N. Y. Branches: Chicago and San Francisco
The words "TREK" and "PRESTONE" are registered trade-marks of National Carbon Company, Inc.

TRAVEL WITH **Trek** ANTI-FREEZE AND GET THERE WITH **PROFITS!**

Here's a Horse

Just as the textile industry has developed special pre-shrinking processes—

Thermoid has developed PRE-STRETCHING to a new high, without losing flexibility.

This process is called
Thermoidized PRE-STRETCHING.

Don't make the mistake of discounting Thermoidized Pre-Stretching's great importance, just because ordinary pre-stretching has been a part of quality fan belt construction for a number of years.

Thermoidized Pre-Stretching is truly a "horse of a different color."

Like first efforts at pre-shrinking in the textile field, early attempts at pre-stretching of fan belts left many things to be desired...often re-

sulted in other undesirable factors.

Only Thermoidized Pre-Stretching eliminates fan belt trouble before it starts without sacrificing flexibility or the shape-strength of the belt necessary for the cords to ride at the neutral axis and drive efficiently. Only Thermoidized Pre-Stretching indefinitely postpones the ordinary fan belt life cycle of stretch . . . slip . . . wear . . . and final failure.

No product could offer a finer example of quality materials combined with quality construction. The cords, the top and bottom rubber members, the tie gum, the cover . . . all represent the finest that scientific research can produce. Thermoidized Pre-Stretching adds unsurpassed efficiency and performance to this combination.

Matching the quality of this fan belt line . . . Thermoid introduces a completely new selling and merchandising program that is a money maker from your word "go!"



See your jobber or write direct for details about the new Thermoid Sales Reward Premium Plan. Everybody wins!

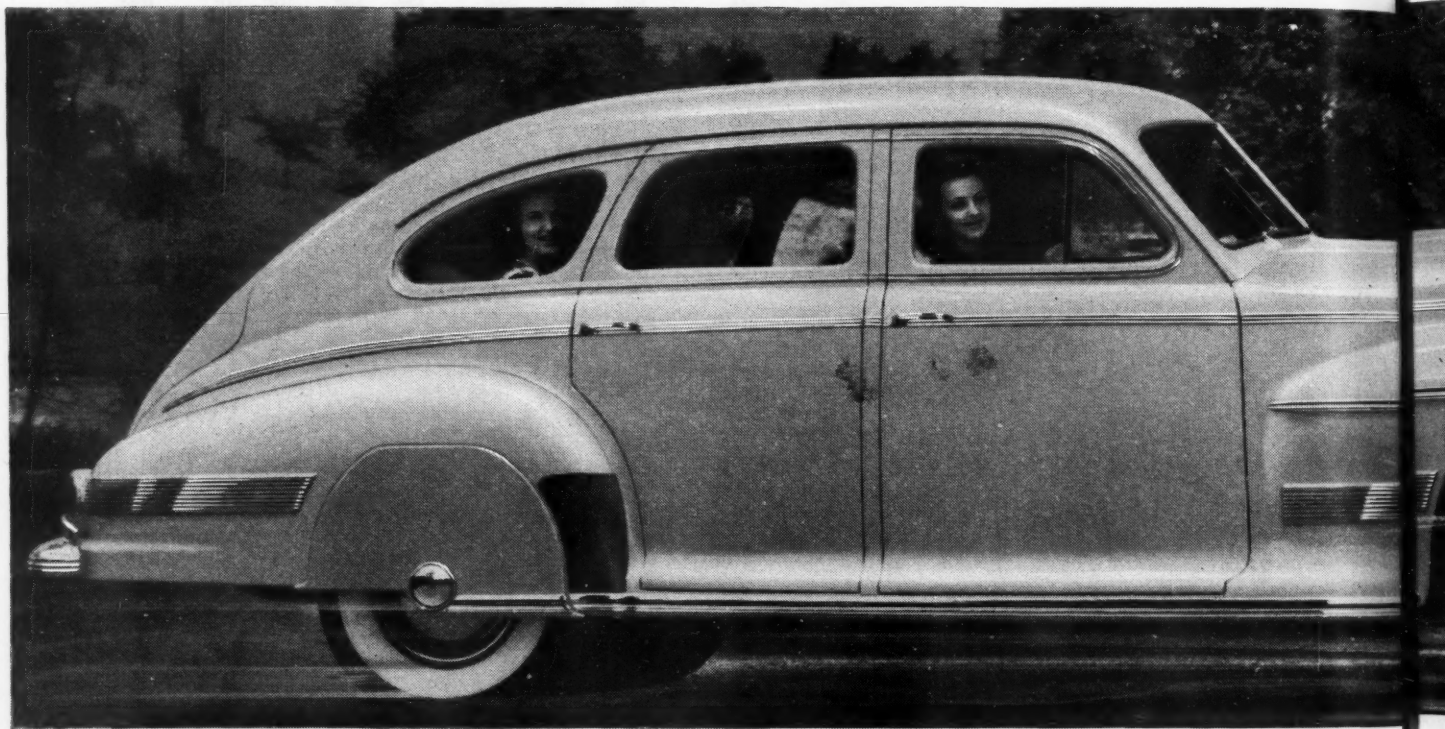
THERMOID COMPANY • TRENTON, NEW JERSEY

of a DIFFERENT COLOR!



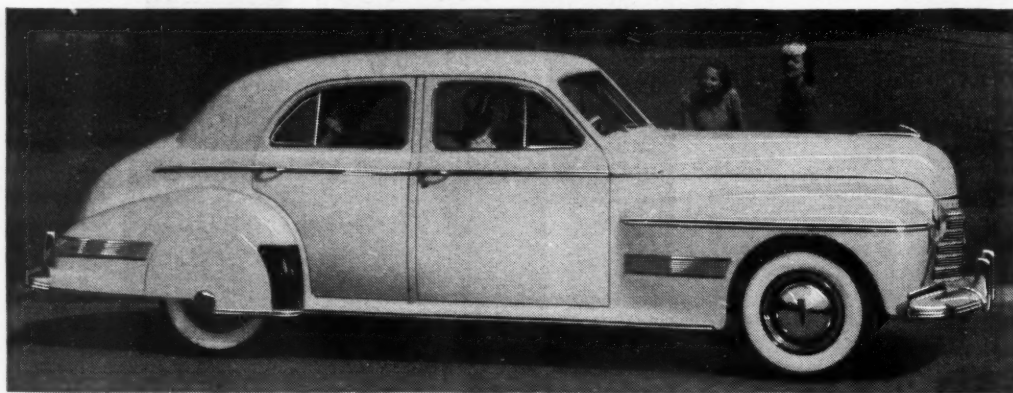
To really visualize the results of Thermodized Pre-Stretching . . . take a look at the picture. Here you see a little over 1500 pounds of horse getting a lift from a Thermodized Pre-Stretched Fan Belt. This belt was borrowed from service in an automobile. After the experiment it was returned to its normal service, and the belt worked perfectly at the original adjustment.

With All Flags OLDS SWINGS



(below) CUSTOM CRUISER 4-Door Sedan (Six or Eight)

(above) DYNAMIC CRUISER 4-Door Sedan (Six or Eight)



IT'S easy to see which way the wind blows for 1941! And it's easy to see why Olds dealers are all set for the biggest year in Oldsmobile history. Here are the reasons why! (1) The broadest, most diversified line of cars Oldsmobile has ever offered. Six Series—three Sixes

and three Eights, covering every price class but high. (2) A brand new Eight in the low-price field. A bigger, smoother 100 H. P. Six. (3) More size, more room, more wheelbase in all six lines—plus a sensational luxury story. (4) Styling so modern and so distinctive it's bound

THE CAR
Ahead!



IT'S

OLDSMOBILE

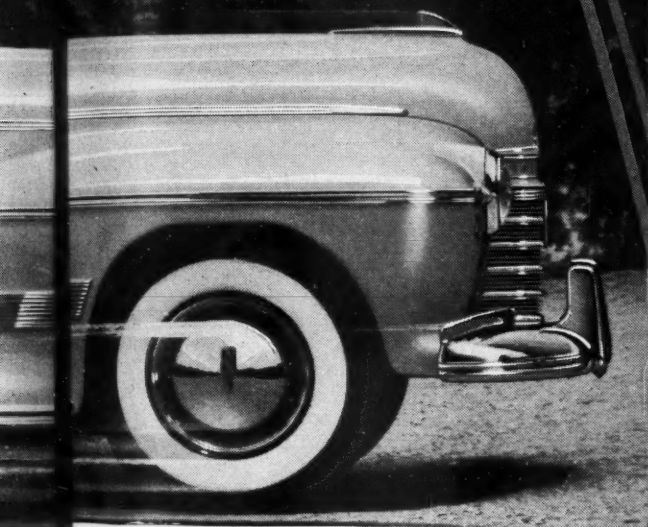
Wings Flying! SAHEAD INTO '41!

6 NEW LINES
3 SIXES - 3 EIGHTS

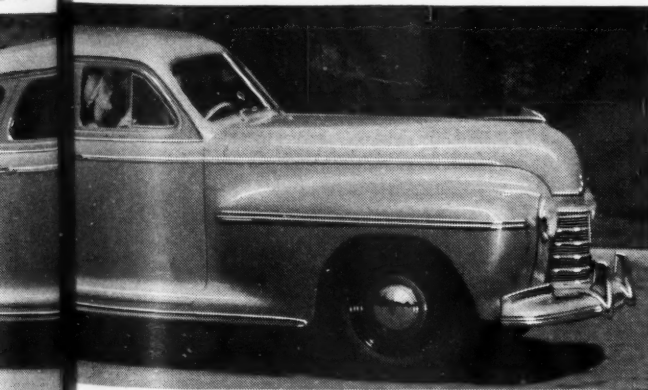
STYLED TO LEAD

BUILT TO LAST

ALL OFFERING
HYDRA-MATIC DRIVE!
NO CLUTCH! NO SHIFT!
OPTIONAL AT EXTRA COST



(below) OLDS SPECIAL 4-Dr. Sedan (Six or Eight)



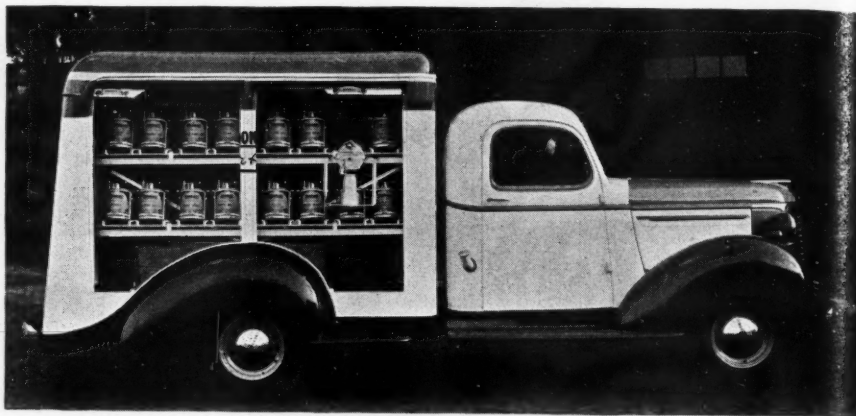
to set the pace for the industry. (5) The pulling-in power of the most talked about advancement in years—Hydra-Matic Drive. It's a great story—a great opportunity to make money. Get on the band wagon now!

MOBILE

Hydra-Matic Drive—the sensation of 1940—will go bigger than ever in 1941! 25,000 owners have proved beyond a doubt that Hydra-Matic Drive is the greatest engineering achievement in this generation. It's appealing! It's competitive! It's the greatest demonstration feature you ever saw!



Carrying Arco's color machine right into the paint shop for an actual demonstration, this new Arco service car is now patrolling the midwestern territory. The color machine contained in it is complete in every detail and makes all lacquer and synthetic lacquer (Transo) colors for all cars since 1933. One side of the custom built truck body slides up into the roof to permit operation of the machine.



WILLIAMS
SUPERIOR DROP-FORGED TOOLS
"SUPERSOCKETS"

J. H. WILLIAMS & CO.
"The Wrench People"
 225 Lafayette Street
 New York, N. Y.
 Western Warehouse and
 Sales Office: Chicago
 Works: Buffalo

At the same time, announcement was made that Purolator sales for the first eight months of 1940 were the largest for any comparable period in the company's history.

Unlike tires,
WORN BRAKE LINING
CAN'T BE SEEN



A worn tire can be seen, but the motorist cannot see dangerously worn brake lining, unless a wheel is pulled.

Raybestos is making that vital safety reminder in 64 million advertisements in Saturday Evening Post, Life, Collier's and Country Gentleman.

More than ever, car owners right in your community are ready to let you pull a wheel every 2,500 miles . . . uncovering many re-lines, parts replacements, etc., for you.

Make this extra business yours. Feature Raybestos brake service. Raybestos offers a complete tie-in plan. Ask your distributor.

**THE RAYBESTOS DIVISION of Raybestos-Manhattan, Inc.
BRIDGEPORT, CONN.**

Brake Lining, Clutch Facings, Fan Belts, Hose • For Cars, Trucks, and Buses.



Raybestos

"YOUR 2 BEST FRIENDS for HIGHWAY SAFETY"

AC Production Increased

Increased production in the oil filter, spark plug and air cleaner departments at the AC Spark Plug plant, with two shifts working to supply the requirements, indicate the sharp upward trend in the automobile industry on the eve of new model announcements, according to L. Clifford Goad, president and general manager.

Goad declared that construction of a large new AC plant in Flint for the manufacture of spark plugs has been completed and will be in production within about 60 days.

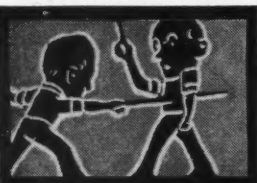
Heads Little Rock Dealers

B. T. Kaufman, of the Critz-Chevrolet Co. was elected president of the Greater Little Rock, (Ark.) Automobile Dealers Assn., succeeding Harold Sadler, of the Sadler-Ross Motor Co.; Also elected were Van White, of the Van White Pontiac Co., vice-president; L. Y. Cohen, of the Shoemaker-Nash Co., secretary-treasurer.

Dealers agreed to close their business establishments Sundays, including garages, and to attempt to make this effort unanimous among independent or used car dealers.



Police departments and safety groups in forty states have requested this four-color safety poster, one of several, contributed by The Raybestos division of Raybestos-Manhattan, Inc., Bridgeport, Conn., in the interest of highway safety. Police department of New York City has already placed thousands of the posters in public buildings, garages, schools and brake stations.



"dag" in rubber lubes

insures quick, complete penetration

Use a rubber lube containing "dag" colloidal graphite on those engine mountings, squeaky shackles - any rubber part that is noisy.

It is harmless to rubber or metal finishes and its minute particle size makes quick penetration to the trouble sure, eliminating the squeaks . . . Acheson worked out the formulas, which have been patented, with "dag" colloidal graphite as the basic part. Any gun, giving a needle spray, may be used to apply these rubber lubricants - they

6 ADVANTAGES
OF A "DAG"
RUBBER LUBRICANT



NON-INJURIOUS
TO RUBBER



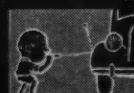
NON-
POISONOUS



LONG
LIFE



EASY TO
APPLY



NON-INJURIOUS
TO
METAL FINISHES

are NON - POISONOUS,

NON-INFLAMMABLE,

and the presence of the

solid lubricant keeps the

squeaks away longer - you'll

have no "comebacks" be-

cause of "birdies" - it will

last as long or longer than

the rest of the lubrication

job. . . Selected marketers

blend and package "dag"

colloidal graphite rubber

lubricants under their own

trademarks. We will glad-

ly supply the names of

several such companies.

Send for descriptive folder

giving complete details.

ACHESON COLLOIDS CORPORATION
PORT HURON, MICHIGAN



Periodic Inspection Pays, Clinic Head Points Out

One out of every three automobile failures on the highway can be avoided by a systematic check-up of the engine, according to engineers of the Ethyl Gasoline Corp.

Cars should be tuned up after every 5000 miles of driving, declared the engineers, who studied the problem of breakdowns in connection with the operation of a nationwide network of Ethyl clinics.

Data assembled by the American Automobile Assn. are cited to show that of the more than 10,000,000 calls annually for emergency road service, about 33 per cent involve difficulties with the starting and continuous operation of the engine. About 13 per cent are due to the battery, 12 per cent to ignition trouble, 3.8 per cent to starter difficulties.

"Mishaps in these categories are not accidental," it is pointed out by John G. Martin, national director of the clinics. "They can be prevented by thorough periodic inspection. A modern motor tune-up includes a check of the battery, spark plugs, cables, carburetor, and the gasoline lines, as well as a scientific adjustment of the timing so the gasoline will deliver full power, the check-up shows the condition of these parts so replacements can be made to avoid a breakdown along the highway, perhaps miles from a garage."

Life of a Bad Brake

(Continued from page 29)

vent installations of this kind.

In Fig. 8 is illustrated the mechanic's dream—a properly relined set of shoes, a drum that matches the contour of the shoes, and a perfect adjustment. Modern brake drum turning and grinding equipment, plus brake lining grinding and shoe checking tools have taken the guess-work out of the up-to-date brake service job.

**THE PERFECT SET-UP
FOR YOU!**

A Complete

**CERTIFIED
RE-WIRING
DEPARTMENT
IN ONE UNIT!**



PACKARD presents this new Work Bench Display as the perfect set-up for service stations and garages—large or small—that want to cut themselves in on the sure-fire profits of Packard Certified Re-Wiring Service.

The new Packard Work Bench Display is no mere ornament . . . not the kind of equipment that “gathers dust” or clutters up the shop. It’s built for real hard use. It’s sturdy! It’s practical! You’ll use it week in and week out for re-wiring jobs and *all* electrical repair and overhaul work. The bench is the right height for comfort . . . the right tools are handy . . . and the all-metal construction makes it practically indestructible.

There’s nothing we can tell you about this Work Bench Display that you can’t see for yourself. It has that “quality” look that tells your customers they’ve come to the right place. There’s a place for the mechanic’s Certified Re-Wiring Certificate, soldering iron, voltmeter and bulb socket voltage adapter, cable stripper and Port-O-Lite. Also your stock of Packard spooled cable, battery cables, ignition cable

sets, and a drawer for terminals and tools you want to lock up.

Set up a Certified Re-Wiring department with this Packard Work Bench Display. Packard supplies complete service instructions for checking the electrical system—sales helps—signs—and advertising support. It’s a perfect set-up for you.

See Your Packard Jobber

He’ll give you complete details on the new Packard Work Bench Display, and explain the Packard Certified Re-Wiring program that boosts your electrical business. Ask him to show you the new Packard film, “Copper Dollars.” Packard Electric Division, General Motors Corporation, Warren, Ohio.

Packard
REG. U.S. PAT. OFF.
TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

Eight-Month Perfect Circle Replacement Sales Record

Demand for Perfect Circle Piston Rings thus far in 1940 has resulted in a new replacement sales record for The Perfect Circle Co., according to information released by Lothair Teetor, president. Teetor said, "We manufactured and sold for replacement more piston rings in the first eight months of 1940 than in any previous eight months in our history."

Employment in all four Perfect Circle plants in Hagerstown, New Castle and Tipton, Ind., and Toronto,

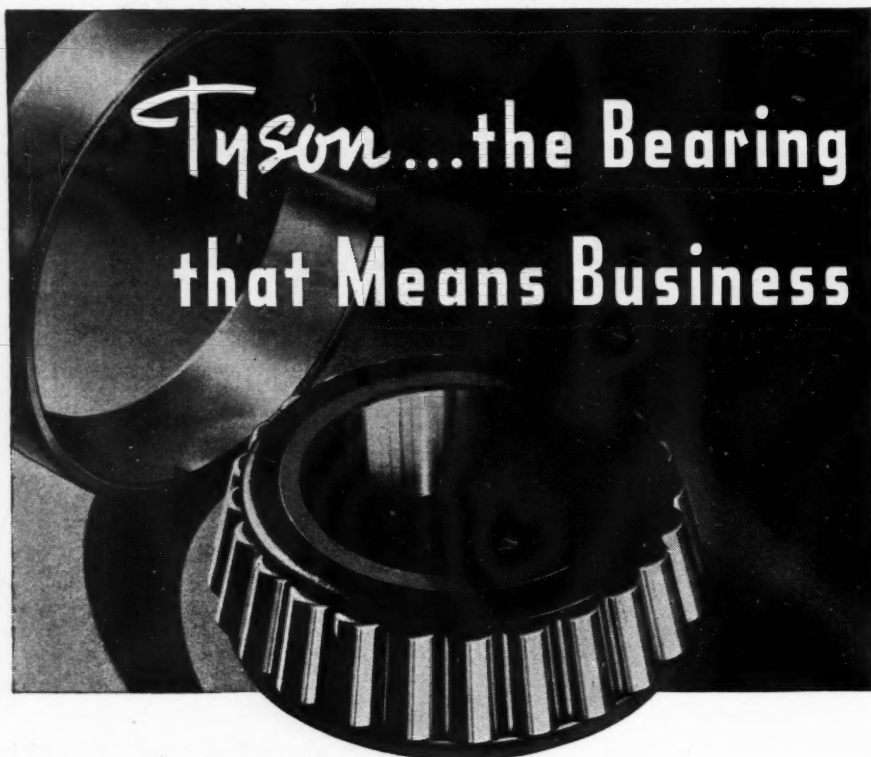
Canada, is at record levels. The majority of departments are on a two-shift basis, while some departments are operating on a three-shift basis.

Battery Year Book

The Association of American Battery Manufacturers, Inc., has just released its 1940 *Year Book*. Among statistical items of particular interest to the storage battery industry are figures on car and truck registrations, battery production and export, trends in motor transportation as well as prices and consumption figures on raw materials used in the industry.

Mechanics' Repair Manuals

The third series of NAPA Mechanics' Repair Manuals issued by the National Automotive Parts Association is now ready. These new manuals cover the 1939-40 models of Chevrolet, Plymouth and Ford-Mercury. In text, illustration and make-up, these manuals are planned to help the mechanic do more efficient and profitable work. Short cuts and time-saving methods are given, and cautions against possible oversights are frequent. The manuals are printed on tough, grease-resistant paper. They are available through NAPA warehouses and jobbers at a cost of 65c. each.



- One look at a Tyson *Cageless* Bearing, and you know it means business.
- *All rolls* . . . no cage to cause trouble. *All rolls* . . . thus maximum capacity (about 30% more than interchangeable cage-type bearings). *All rolls* . . . double the average bearing life. *All rolls* . . . most rigidity.
- No wonder customers say "It's good business to tie up with Tyson!"

Cageless FOR HARD SERVICE *Cage-type* FOR REGULAR SERVICE

Tyson

TYSON ROLLER BEARING CORPORATION, MASSILLON, OHIO

REBUILDING GEAR TEETH

Here is an easy and profitable way to replace broken gear teeth in a cast-iron or steel gear.

Tools required are: a welder (if acetylene, use bronze rod with flux—if an arc welder, use heavy coated



bronze rod); a hammer and chisel; center punch; drill and tap; coarse file and some carbon blocks (I use Ford Model A generator brushes).

Clean off all grease, and chisel the break flat so that the drill will start true. Center punch and then drill holes about $\frac{1}{8}$ in. apart for the entire length of the tooth, using a drill slightly smaller than the width of the tooth. Tap the holes, and screw in cap screws, setting them tight in the bottoms of the holes. Saw off the cap screw heads slightly below the height of the finished tooth, and file them to conform to the pitch of the tooth, and slightly undersize.

Then place the carbon blocks around the tooth so as to form a mould. Apply the welding rod, using plenty of heat to make a quick weld and cause the weld metal to flow around the studs and down to the bottom of the tooth. Cover the studs completely with the weld metal. When cool, remove the carbon blocks and file the tooth to the proper height and pitch.



There's a Great Oil Coming!

It's a sensational step forward in motor lubrication.

It's an advance in refining skill and science all along

the line. It not only meets every demand of the

modern motor . . . it also anticipates the require-

ments of tomorrow . . . today!

For a preview . . . write, or mail the coupon, now.

TECHNICAL RESEARCH LABORATORY, DEPT. 10C

Quaker State Oil Refining Corp.
Oil City, Pa.

Gentlemen: Please send me at once your free technical booklet containing comparative tests, data, and descriptive matter on the New Stabilized Quaker State Motor Oil.

Name.....

Street.....

City.....

(Cut this out—Fill in—Paste on Penny Post Card)

Van Norman Covering Its Canadian Markets

To provide better coverage to Canadian users and jobbers, appointments of three special representatives have been announced by Van Norman Machine Tool Co., Springfield, Mass.

With headquarters near the Canadian territories, these representatives hope to improve Canadian demonstrations of the entire Van Norman line, to work closer with Canadian jobbers, and to assist in speeding up repair shop work.

British Columbia and Alberta are covered by W. N. Abbott, Portland, Ore., Manitoba and Saskatchewan by J. Drew Ehrhardt, Minneapolis, Minn., and Ontario and Quebec by R. A. Ehrhardt, Detroit, Mich.

Perfect Circle Dividend

The directors of The Perfect Circle Co. declared the regular quarterly dividends of 50c. per share on the 162,500 shares of outstanding capital stock of the company on September 6. The dividend is payable October 1 to stock of record at the close of business September 16, 1940.



"Keep cool, boys, keep cool; that's the main thing, keep cool!"

Radiator Hose

Display Rack

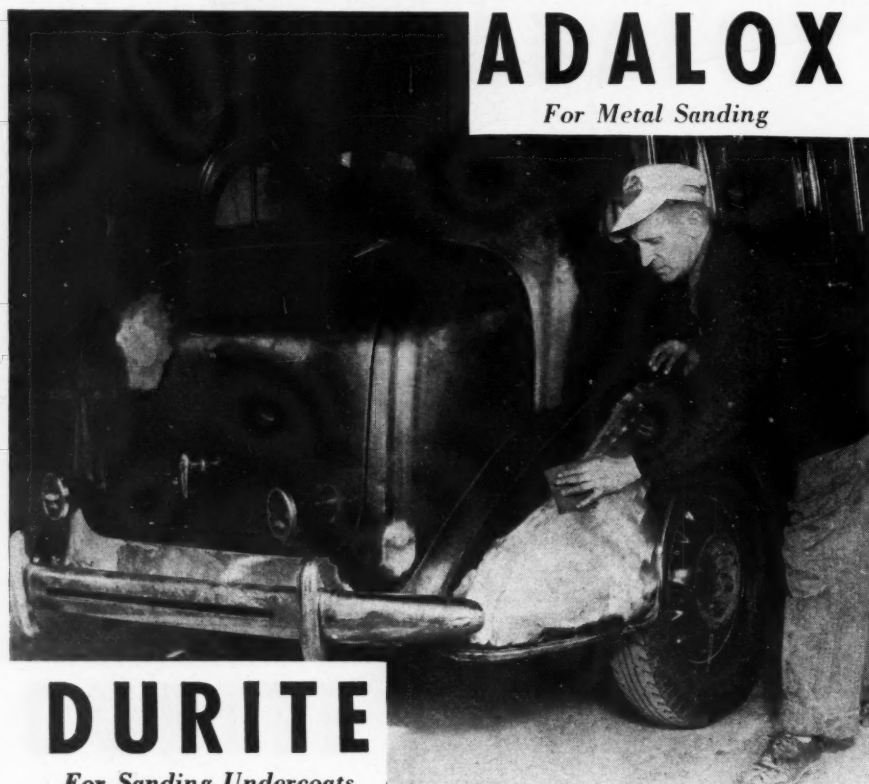
A new and different display rack for curved radiator hose has been announced by Thermoid Co., Trenton, N. J. This rack is offered in a recently announced deal planned to give the



retailer wide coverage of the market. The 22 pieces of hose in the deal cover 95 per cent of the cars and trucks requiring curved hose, according to the manufacturer. The rack rotates on a bracket, making the selection of a particular hose easy.

Cooling System Filter

A filtering device designed to prevent clogging of the radiator by removing rust scale particles and other sediment from the cooling system solution is being marketed by Chas. J. Franks, Inc., 416 S. Kenosha, Tulsa, Okla. The device has a glass bowl sediment trap which can be easily removed and cleaned. The Anti-Clog is installed in the water line to the radiator, and is made in 1 1/4 in., 1 1/2 in. and 2 in. sizes, priced at \$5.50 for the two smaller sizes and \$14.50 for the 2 in. size.



DURITE

For Sanding Undercoats

Low Sanding Costs You'll Like High Quality Results You'll Appreciate

These two quality papers—Adalox (Aluminum Oxide) and Durite (Silicon Carbide)—are especially designed for two major sanding operations—metal clean-up and sanding undercoats. Both papers may be used dry or with gasoline.

Economical!

Efficient!

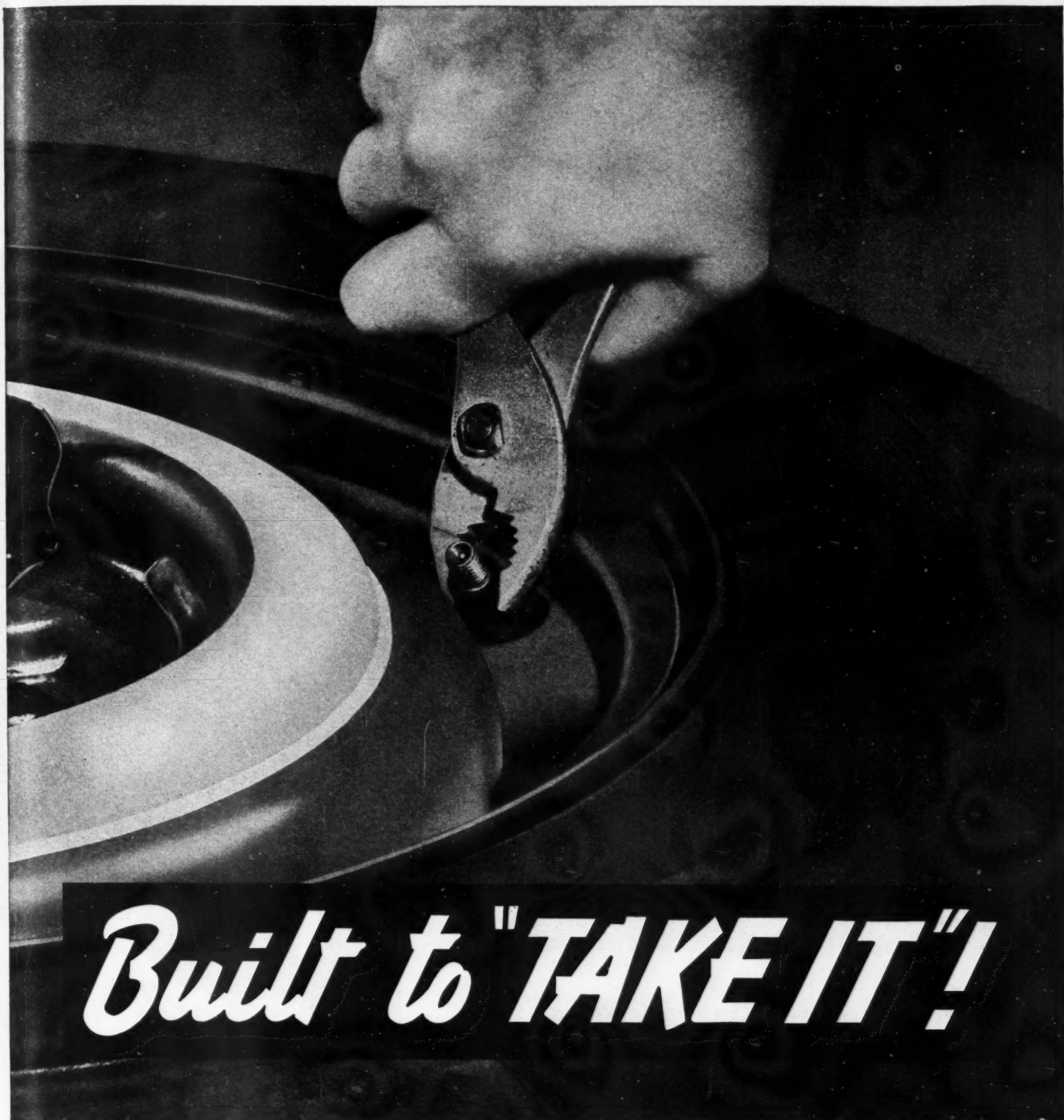
ASK YOUR JOBBER TODAY

Maximum
CUT

Minimum
COST

BEHR-MANNING
(DIVISION OF NORTON COMPANY)
TROY, N. Y. AND 15 BRANCHES

MA100



Built to "TAKE IT"!

Ever watch a service man give a tire valve "the works" to line up a tube when mounting a tire? Some use special tools—most just reach for their pliers, grab the valve and haul away. Leaky valves would be common if the more than one hundred and fifty million standard tire valves in daily use were not "built to take it".

Schrader tire valves have a "backbone" machined from solid brass rod. Extending full length, this sturdy housing completely safeguards the valve mechanism from plier

pressure, rim hole friction and the wear and tear of mounting. The valve cap provides the final safeguard against the normal abuses of everyday operation. Guaranteed airtight up to 250 lbs. pressure, it shuts out dirt . . . and seals the valve mouth.

Schrader REG. U.S. PAT. OFF. TIRE VALVES

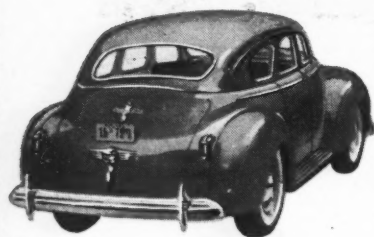


A. SCHRADER'S SON Division of Scovill Manufacturing Company, Incorporated BROOKLYN, NEW YORK

A New MORE BEAUTY



Wider, Lower, space-flared bodies ...
5-foot cushions ... Added elbow room!



New Airflow bodies ... wider ... lower! New radiator design ... simple, massive, commanding! New, longer hood. New sharp backward rake to the windshield which has 676 sq. inches of glass area ... thinner door posts ... bigger curved rear window ... the unbroken vision of an observation car! Bodies belled out at the window line ... for beauty, for room, for distinction! Lines all

sweeping back to a new and graceful rear ... large luggage locker.

The last word in roominess ... any more would seem a waste! Five-foot cushions ... extra elbow room ... doors wider than most house doors ... extra leg room. Lower center of gravity ... lower roof ... lower floor. Lower, stronger, double-channel, welded frame with new hydraulic shock absorbers provides a still safer Floating Ride.

The nation which acclaimed the beauty of the 1940 Chryslers will vote the 1941 beauties the smartest Chryslers ever!



NOW

Fluid

WITH VACAMATIC

FOR 1941, Chrysler combines *Fluid Drive* with Vacamatic Transmission for automatic safety control! About all there is for the driver to do is to steer and apply brakes and throttle!

Jerks and labors of gear shifting become a mere memory. The car takes off with the smoothness of a liner ... suits its gear ratios to every normal driving condition ... floats effortlessly along ... but is always under positive control. It automatically protects you in traffic, on hills, slippery roads ... in every other driving situation.

Fluid Drive is smooth as oil because it literally is a drive through oil ... no metal-to-metal connection between en-

1941 BEAUTIFUL Chrysler

New
AIRFLOW
Bodies



Drive

TRANSMISSION

gine and rear wheels. Introduced by Chrysler in 1938 it has behind it millions of miles and many thousands of delighted owners!

No words can describe the amazing sensation of riding in the 1941 Chryslers! With *Fluid Drive* . . . with Vacamatic Transmission . . . with more powerful Spitfire engines . . . with dozens of other new evidences of Chrysler engineering leadership . . . they provide literally a brand new motoring experience. You are cordially invited to try them for yourself!

Fluid Drive with Vacamatic Transmission is available on all 1941 Chryslers, optional on some.

Tailored to Taste! Individualized interiors
... Richer fabrics ... Harmonizing plastics !



Inside and out, the 1941 Chryslers are a symphony of color . . . a new peak of form and finish . . . and *tailored to your taste!* Everything related to the color scheme of your choice . . . the exquisite new instrument panels inset with colorful new plastic . . . matching plastic door panels! Upholstery fabrics to suit your individual taste!

A wide selection of rich broadcloths, pile fabrics, Bedford cords, novel new materials . . . harmonizing two-tones and beautiful leathers. Never before have you had such an opportunity to select a car to suit *your* taste, *your* preferences, *your* individuality.

Beneath those deep, wider seats, the softest Airfoam! The button-tufted upholstery is real, not just ornamental. Every fitting bespeaks quality never before built into cars of moderate price. Your Chrysler dealer invites you to see for yourself!

With these great new Chryslers, and the 1941 Plymouth, Chrysler dealers face still another great opportunity. Perhaps you, too, would **BE HAPPIER WITH CHRYSLER!**

Be Modern - **BUY CHRYSLER !**

Reo Installs Inspection-Lubrication Service System

Installation of a new Inspection-Lubrication Service in Reo's sixteen company-owned branches and all distributor and dealer points was announced last month by Frank N. Morgan, general sales manager of Reo Motors, Inc., Lansing, Michigan. The purpose of this is to promote economical maintenance and prolong vehicle life.

With all regular lubrication jobs, Reo customers receive, without extra charge, inspection reports by factory-trained mechanics covering the con-

dition of 150 mechanical points on their vehicle. Written reports indicate the exact condition of the vehicle and repairs or adjustments needed to assure top performance. Under this plan, mechanical irregularities are corrected in the adjustment stage before serious damage results.

This program, Morgan explains, is a sequence to Reo's national expansion program of repair parts distribution. Major inventories of replacement parts carried by all Reo company-owned branches place needed repair parts in the hands of Reo owners anywhere in the United States within 24 hours.



Lloyd M. Taylor, mechanic in an Oakland, Calif., truck factory, with the aid of a partner, is said to have invented a fabricated airplane engine which is made of stamped metal parts that are assembled and fused in an oven. His invention may be the answer to the expanding airplane industry's demand for engines.

FREE SERVICE KIT!

10 compartment, all-steel service kit given with the purchase of ten 25c packages of

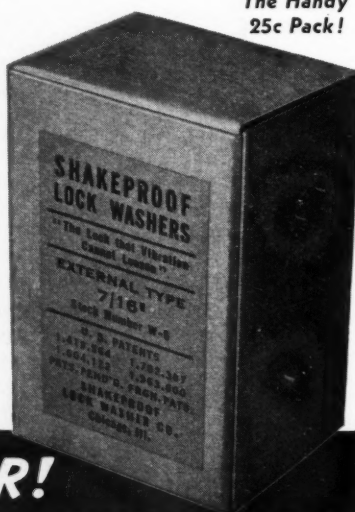
Dealer's Net Price Only \$2.50 Complete

SHAKEPROOF LOCK WASHERS

Here's a convenient way to quickly find the exact size of lock washer you need. This sturdy, metal kit has ten sections—and is packed with an assortment of Shakeproof Lock Washers in the various popular sizes and types which will take care of practically all your jobs. As the different sizes are used up, refills can be made by ordering the sizes you want in the individual 25c packages. Or, better still, get another kit assortment and use your old kit for storing other small parts. Start now to thoroughly protect every nut and screw on the jobs you do. Use Shakeproof—the lock washer you find on all the modern cars. Order your service kit assortment today!

SHAKEPROOF LOCK WASHER CO.
Distributor of Shakeproof Products Manufactured by ILLINOIS TOOL WORKS
2507 North Keeler Avenue, Chicago, Illinois
Plants at Chicago and Elgin, Illinois
In Canada: Canada Illinois Tools, Ltd.
Toronto, Ontario
Copyright 1940 Illinois Tool Works

The Handy 25c Pack!



ASK YOUR JOBBER!

HaDees Has New Under-Seat Heater

The latest addition to the line of HaDees hot water heaters made by Liberty Foundries Co., 23rd Ave., & 10th St., Rockford, Ill., is two models of under-seat heaters. Model FR-60 is designed for installation in cars having as little as 3½ in. height under the seat, and Model FR-70 is for cars with space of 5 in. or more between the seat and the floor. The new under-seat heaters are priced at \$16.95, and are in addition to the line of dash-mounted models ranging in price from \$9.95 to \$21.95.

Designed for use with the new HaDees under-seat heater is a new defroster unit for supplying warm air to the windshield. It consists of a blower, complete heating core and double air outlet. Priced at \$6.95.

Glass Sealer

Permatex glass sealer is the name of a new transparent cement recently developed by the Permatex Co., Inc., Sheepshead Bay, N. Y. This colorless liquid sets immediately, forming a transparent bead, and adheres to windshield glass, metal window frame, rubber weather stripping and similar materials, drying quickly into a tough, durable, pliable waterproof film, according to the manufacturer. It is said to be unaffected by constant exposure to extreme heat or cold. Packed in 1-oz. tubes for resale, and 5½-oz. for service stations.

VOTE FOR VALVOLINE

SATISFACTION OR MONEY-BACK

WIN WITH VALVOLINE'S HOT ELECTION CAMPAIGN

● Here's a sales campaign that ties in with the national elections and ties up new customers and extra business for you. It's the "Vote for Valvoline" campaign with a platform based on that sure-fire merchandising appeal—"satisfaction or money back."

Valvoline gives you everything you need to establish "campaign headquarters" . . . big banners, colorful window posters and powerful displays plus registration certificates and campaign buttons and ballots. You get everything you need to put this campaign over with a bang! And it's all free!

Get ready for extra fall change-over business. Get set for new customers and extra profits. Bet on the "Vote for Valvoline" campaign. It's one "election" bet you can't possibly lose.

VALVOLINE OIL COMPANY, 540 E. 5th ST., CINCINNATI, OHIO
NEW YORK • CHICAGO • ATLANTA • LOS ANGELES • REFINERY IN PENNSYLVANIA



Trucking Industry To Sponsor Advertising

The American Trucking Association, Inc., has announced that final approval had been placed on plans to advertise the billion-dollar trucking industry with a program eventually to include all media—magazines, newspapers and radio—as one phase of its enlarged public relations activities.

Action on this promotion project was taken at a meeting of the public relations committee of the ATA at New York City. It came as a result

of a nationwide survey, which disclosed that the many benefits of this highway transportation service are little known—and slightly appreciated—by the public.

"The trucking industry has grown into a national institution over a brief period of years," said Ted V. Rodgers, president of the association, with headquarters in Washington, at the time of announcing approval of the plan of action. "As a matter of fact, truck transport as an industry was born during the depression—growing into a lusty giant on the basis of speed and flexibility of service and,

above all, because it offered the public a new form of low cost transportation.

"Today there are more than four million trucks on our highways, while this industry provides employment for more than 3½ million persons. Few among the public know the many factors that make the trucking industry a vital element in our national economic picture today. It is our purpose to tell them the facts."

American Trucking Association, Inc., is the official representative in Washington of more than 50 state trucking associations, including also Hawaii, stated John V. Lawrence, general manager, in outlining details of the national program.

"With our rearmament and national defense program getting under way, truck transport becomes an increasingly important agency in serving our Government," said Lawrence. "Already our national organization has offered its aid in coordinating the services of commercial trucks with the needs of the Government. Our president, Mr. Rodgers, is now on duty as a member of the transportation group in the National Advisory Defense Commission headed by Ralph Budd."

The advertising program will feature the many advantages of truck service, not only to the public but also to the Government in the present emergency, added Lawrence. The account is in the hands of The Biow Company, Inc., 9 Rockefeller Plaza, New York City.

Pick REPLACEMENT CARTRIDGES for practically ALL permanent type Oil Filters



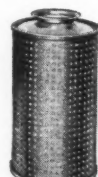
P1X & P2X



P3X



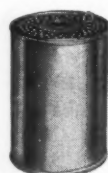
P7X



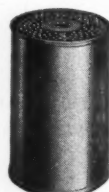
P12X



P15X



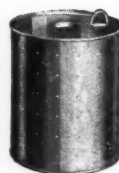
P6X



P8X



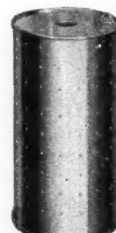
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P5X



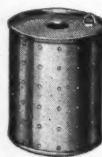
P10XF



P11X



P13X



P14X



P16X



P17X



P18X



P19X

Pick Cartridges list at only 95c each and up. If you don't know all about this easy-to-sell, profit-producing line, ask your Pick jobber or write us for details. Also get full information on complete line of Pick Oil Filters, listing at \$1.65 and up.

Also get latest information on
**REPLACEMENT
WATER PUMPS, Kits and
Parts for Ford, Chevrolet, Plymouth
and Mercury cars and trucks**
Made to and interchangeable with
original equipment specifications.

PICK MANUFACTURING COMPANY
WEST BEND, WISCONSIN

85% of Farm Families Own Cars Study Shows

Importance of the automobile to farm families is revealed in a recent study of 17,000 selected farms by the U. S. Department of Agriculture. The survey indicates that 85 per cent of farm families own motor vehicles.

Highest ratio of ownership was found in central and southern California, where 97 out of every 100 farm families owned motor vehicles. Kansas and North Dakota rank next with automobile ownership in 96 per cent of farm families. Michigan, Wisconsin, Illinois, and Iowa follow with 94 per cent; Oregon and Washington, 92 per cent; New Jersey, 88 per cent; Pennsylvania and Ohio 86 per cent. In the South the percentage is smaller.

Used-car purchases exceeded two to one new-car acquisitions in farm families, the study also showed. Average price paid for new cars was \$739, compared with an average purchase price of \$263 for the used cars bought.

One-seventh of the passenger automobiles and one-quarter of the trucks on 3,000 key farms are 10 or more years old, according to a survey made by two agencies of the Federal Government.



COMPETITION GOT YOU HANGING ON THE ROPES?



Exclusive Construction Gives You Plenty to Talk About!

Corners and edges of plates can't cut through separators . . . Plates evenly spaced for equal load . . . Heat reduced, buckling minimized . . . Longer life for separators . . . Free circulation of acid and escape of gas . . . No chafing or vibration . . . Short circuits minimized.

Win the next round with VESTA, the battery that's Plate Locked!

Get hold of the Vesta sales story and come out swinging! It's like having a horse shoe in your glove—and it's legal. Best of all, your competition can't have Plate Lock because it's patented, exclusive with Vesta.

If you hanker for a new kind of sales story, one that lets you talk more power and longer life AND back it up with the facts, then find out about Plate Lock quick. The way battery men are grabbing the Vesta franchise, you'll have to hurry. Better send a letter for full details RIGHT NOW. Address your request to Vesta Consolidated, Inc., Dept. F22, Chicago, Illinois.

PRICES DOWN! New, 27-month 100 ampere hour genuine Kathanode and 36-month Kathanode now priced same as ordinary batteries — another Vesta weapon to lick competition.

**Exclusive features mean
easier sales... bigger profits!**

Knudsen Leaves G. M.

Alfred P. Sloan, Jr., chairman of General Motors Corp., has announced that because of his governmental duties as a member of the National Defense Advisory Commission, William S. Knudsen, on leave of absence since June 1, 1940, in the service of the Government, and at Knudsen's request relieved from duty as an officer of the corporation, tendered his resignation as president, as a member of the board of directors and of the Corporation's Policy and Administration Committees, thereby completely severing his official relation with the corporation.

The board felt that in view of the approaching time when the corporation may be in a position to enter into contracts with the Government to supply products required under the defense program, it must of necessity accept Mr. Knudsen's resignation in order to remove any possibility of conflict of interests, owing to Mr. Knudsen's dual position. This was done with the greatest of regret.

No action was taken at the meeting with respect to Knudsen's successor.

C. L. McCuen, vice-president, was elected a member of the Administration Committee, and Harley J. Earl, director of the Corporation's Styling Section, was elected a vice-president of the corporation.



"This is a fine time to discover that this map is fifteen years old!"

Pedrick Ring Sets

Wilkening Mfg. Co., Philadelphia, Pa., now has 33 new engineered sets in its line of Steeloil piston rings. Of these, nine are for use in late model passenger car engines, and 24 are for use in heavy duty truck and bus engines. Most prominent among the engines serviced by the new Pedrick sets are Cummings Diesel, GMC, Hercules, Waukesha and White.

Battery Makers Convene

L. B. F. Raycroft, Philadelphia, president of The Association of American Battery Manufacturers, announces that the Association's 17th Annual Convention will be held Oct. 24-25 at the Palmer House in Chicago.

The two days will be devoted to a consideration of management, manufacturing and merchandising problems.



HITCH YOUR SALES EFFORT

TO A MANUFACTURERS CAMPAIGN



By
ROSE LU GOLDMAN

The "tie-in" technique used extensively in other fields can be profitably applied to the business of selling service to feminine drivers

WOMEN as a whole want to know "what's new?" They have found that about the best source of these ideas are the articles and *advertisements* in their favorite magazines and newspapers. Yes, they read the ads—not to be amused—but to learn; to learn new ways to cook corn, new styles for the coming season, how to care for their cars, and even how to cut corners on the budget.

The thing for the servicemen to do then is to see how they can take ad-

vantage of this. No one service station can afford a four-color ad in a national magazine. Nor would he want one if he could afford it. But he can tie-in by using window displays and counter placards with as many of these national ads and articles as are available. Such advertised products are already in the public eye, and he not only reaps the benefit of the ad, but he goes one step further and shows the lady where she can obtain that item or service of which she read,

right in her own home town.

You see, the only missing link in consumer magazine advertising is that the reader is rarely at the "point of sale." She's usually at home, or at a beauty parlor, or some other inaccessible place, and while she was impressed at the time with what she read, still the idea must be pigeonholed and her attention turned to the more immediate problem of what to have for dinner or how to get the
(Continued on next page)

Grey-Rock

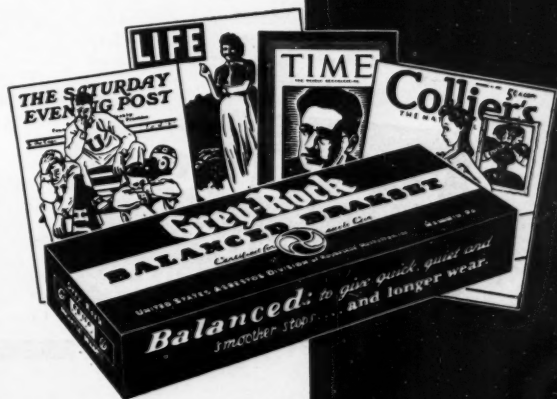
Most motorized nation on earth—that is America! We use more automotive power, set more wheels spinning—we stop more smoothly with far more brakes than all the rest of the world together.

It's a real expression of confidence that American buying in 1940 has repeated last year's performance, breaking a Grey-Rock sales record every single month of the year.

It reflects the aggressive selling of Grey-Rock Dealers who have earned more money on friction replacements than ever before . . . it is an endorsement of the charted procedure with which they sell, specify, and install Grey-Rock materials . . . it is a commendation of the whole line of Grey-Rock products.

As another automotive year begins, Grey-Rock pledges even greater help to more dealers in adding more volume to the fastest growing line. You are urged to see your Grey-Rock jobber.

Advertised to the 50,000,000 audience of four great weekly magazines, and fitted by Kam-Way, the only shoe-re-arcing equipment—Grey-Rock Balanced Braksets are easily sold and quickly installed.



UNITED STATES ASBESTOS DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA.

YOUR SALES EFFORT

(Continued from page 111)

stain out of sister's new gloves.

For the article to be effective in the majority of cases, the women will have to be reminded again when and where to buy.

For an example of how this tie-in technique has been developed to the nth degree and made to pay, let's look at the fashion industry. Everyone from designer and manufacturer to sales girl and window trimmer, makes

it her business to know "what's new." They read both trade and consumer publications faithfully. No sooner does a leading fashion magazine carry a story on a new color, or a new style, than smart stores throughout the country will begin to feature it in their windows. Counter placards and newspaper ads announce "as seen in *Vogue*," or, "as seen in *Harper's Bazaar*."

What they're really saying to each lady who goes by is "Remember that pretty color you read about the other day? Well, we have it for sale right here!"

Now, how can you apply this technique to your service business? In the case of cars, even more than in the case of clothes, women need to be reminded of what to do and when, for they know little and are apt to think even less about what makes a car run and how to keep it going.

If you will thumb through any one of the national weekly magazines, or one of the leading women's publications, you'll find a lot of ads for the services you offer and the stuff you stock on your shelves. A number of these magazines, including *Collier's*, *Woman's Home Companion*, *McCall's*, and, *Good Housekeeping*, feature regular articles on the driving and care of the car. These can benefit you just as much as they benefit the readers. Are you getting your share? On how many of them do you really tie-in?

It isn't enough just to carry the product, or to be equipped to render the service. Unless your salespeople—your service managers—and your customers are fully aware of what's going on, you'll never reap the harvest.

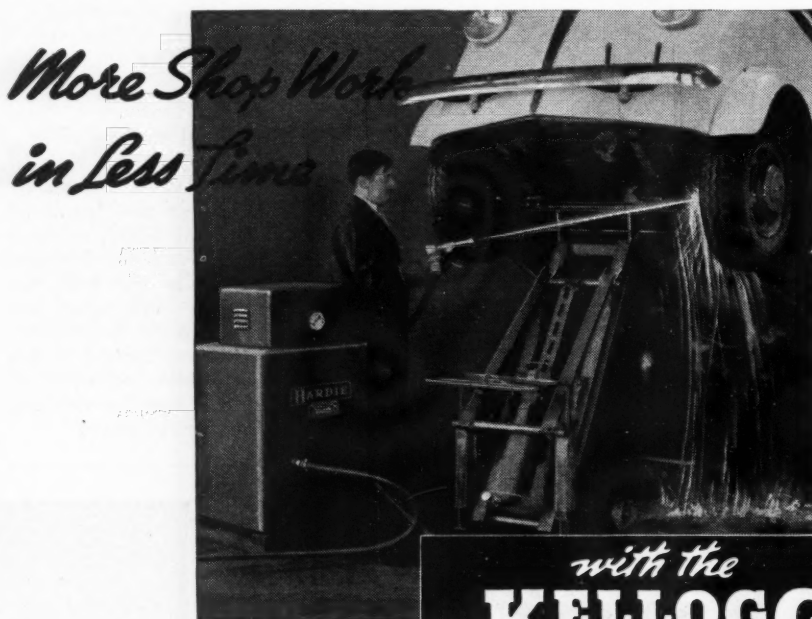
To illustrate, let's look at the cases of Mrs. Johnson and Mrs. Brown, two average ladies who happened to read the same article on how to prepare their cars for winter driving. Mrs. Johnson was so impressed with what she read, that she drove into her regular service station and asked to have her car so serviced. The mechanic knew nothing whatsoever about the doctrine the articles preached, and so he replied, "Oh, there's not so much to that, Ma'am. We'll drain the radiator and put in anti-freeze, and look at the battery and the generator, and change the oil. That ought to see you through in fine shape."

Now when Mrs. Johnson had driven in she was prepared to have a dozen other things checked and adjusted—vital things that the article had mentioned, including front wheel alignment, lubrication, tires replaced or retreaded where necessary, fan and fan belt checked, etc. She didn't need to be sold these jobs—she was already sold, but unfortunately the mechanic didn't know to what she referred, and so both of them lost out.

Now the other lady was Mrs. Brown. She also read the article (the illustration was clever and caught her eye) but she doesn't know a thing about her car, and while it all sounded sensible at the time, she completely forgot about it within an hour.

Several days later while she was driving home from a bridge party her car started to sputter and buck and she turned into the nearest garage. All she really needed was gasoline, but while it was being put in, she again saw that clever illustration

(Continued on page 114)



HERE'S a time-saver—and money-saver—in any service station. No need to move cars for lubrication, brake service, washing, mechanical work. Simply roll Kellogg Portable One-End Lift under axle. Air pressure alone raises car or truck to desired height, up to 56". Automatic safety lock supports load. Customers like the speeded-up service it enables you to give.

Sales Offices: 332 S. Michigan Ave., Chicago, Ill.; 230 Park Avenue, New York, N. Y.; 3355 East Slau-son Ave., Los Angeles, Calif.; 4785 First Ave., South, Seattle, Washington; Niagara Falls, Ont., Canada

KELLOGG
AIR COMPRESSORS
LIFTS • CAR WASHERS

with the
KELLOGG
Portable
ONE-END LIFT

IT OPERATES ON AIR ALONE

SAVE WASHING TIME WITH THE HARDIE-KELLOGG CAR WASHER

More wash jobs and better wash jobs in less time—with less labor and less material. Use hot water or solutions at high pressure. Size and capacity for any requirement.

Mail The Coupon

KELLOGG DIVISION OF THE AMERICAN BRAKE SHOE & FOUNDRY CO., 111 HUMBOLDT ST., ROCHESTER, N. Y.

Please send me complete information about

..... Kellogg Portable One-End Lift

..... Hardie-Kellogg Washer

Name.....

Firm Name.....

Address.....

City..... State.....

We've hitched our wagon to a FIREBALL

THIS formidable example of precision machinery you see looming here is the new 1941 Buick FIREBALL engine.

Like all engines that hold major speed records on land, sea and in the air—like the famed General Motors new Allison aviation engine—it is *valve-in-head* type.

It represents 39 years of the development concentrated on valve-in-head design—and it stands today as the one engine in the land that really capitalizes on the new and better modern fuels.

But there's more to this engine and its companion feature, Compound Carburetion, than simply their amazing ability to make better use of fuel.

There is more to them than as much as 2 more miles to the gal-



opportunity born of clean-cut and demonstrable superiority of performance.

This Buick has that superiority. It has it from an exclusive source— from features no other car on the market can offer and that few can ever offer.

lon—30-mile fuel economy at 50-mile speed—potential power so great that even at 80 your engine is traveling less than “halfway out.”

It is established fact that the years when Buick has made its soundest and most effective advances have been the years in which forward strides in engineering have been the backbone of its story.

And it should be plain to every dealer familiar with automobile history that *there is no greater opportunity to be found than the*

So in hitching our wagon to the FIREBALL Eight we've done more than advance Buick's prospects for the coming season.

We have enhanced the position and the sales-possibilities of every dealer who takes our 1941 product to market.

Sales-wise and production-wise, 1940 has been the biggest year in history for Buick.

But just watch Buick and its hard-hitting sales organization in 1941!



Buick prices begin at \$935

for the Business Coupe delivered at Flint, Mich.

Transportation based on rail rates, state and local taxes (if any), optional equipment and accessories—extra. Prices subject to change without notice.

"Best Buick Yet"

EXEMPLAR OF GENERAL MOTORS VALUE

WHEN BETTER AUTOMOBILES ARE BUILT BUICK WILL BUILD THEM

Foundation Aids War Dept. In Traffic Control Problem

Arrangements are being made by the War Department to utilize the services of the Automotive Safety Foundation in studying traffic control problems in connection with military movements.

The services of the foundation were tendered to the War Department by Paul G. Hoffman, President of this organization. The offer was accepted by the War Department and a number of conferences have

been held at which Army officers and some of the country's leading traffic control experts were present. Among the subjects discussed were Traffic Engineering, Training of Traffic Military Police, and Driver Training and Fleet Operation.

Civilian traffic control experts, associated with the Automotive Safety Foundation, attended some of the Army maneuvers held during August and are planning to submit reports and recommendations based on their observations of Army motor transport movements.

Rayon in Tires

(Continued from page 35)

difficulty has been guarded against.

The advantages of rayon cord tires are listed as: greater resistance to heat, resulting in a high increase in the safety factor; less heat generated at high speed and under heavy load; improved tire life because of less heat and, of special importance to truck and bus operators, the stronger rayon cord carcass permits repeated recapping; thinner side walls, permitting greater flexibility under impact, and improved riding comfort.

Because of the increased cost of rayon and to the additional treatment required in the manufacture of this type of tire, rayon cord tires are more expensive than the conventional cotton cord. Truck and bus operators state that the additional cost is justified by freedom from delays due to tire troubles.

Buffalo Show Is New Convention Hall Inaugural

Buffalo's new \$2,000,000 convention hall, one of the finest in the country, will be ready to open just about the time of the Buffalo Automobile Show, October 19-26. Association officers are capitalizing on the opening of the hall and have succeeded in leasing it for the show. In addition to the Automobile Show, the occasion will serve to celebrate the opening of the new structure.

Your Sales Effort

(Continued from page 112)

—this time on a window placard and it reminded her that this particular station was equipped to give her the service of which she'd read. The next morning Mrs. Brown's car came in for "the works."

Simple, isn't it?

"But," you ask, "how can I keep up with all these consumer ads and articles? I certainly can't read every magazine published."

Hardly! Nor is it necessary to do so, though it's wise to read them once in a while when you get the opportunity. Ordinarily, manufacturers, jobbers, and in some cases even the consumer publications themselves offer enough information and tie-in material to keep you well supplied.

Trade magazines are an excellent means of keeping posted on what's new for the industry as a whole, and for you in particular.

It's up to you—the retailer—to make the winning play in this old selling game, and if the play's to be effective it must be well planned, well timed, well placed, and perfectly coordinated.

HOT OFF THE PRESS

With over 500 live Replacement Items

WELL LISTED WITH CROSS INDEXING

1941

Quality ELECTRICAL AUTOMOTIVE EQUIPMENT

Cole-Hersee Company
54 Old Colony Avenue Boston, Mass. U. S. A.

Are you fully supplied for counter and Salesmen?

COLE-HERSEE COMPANY
54 Old Colony Avenue Boston, Mass.

Rep.—Eastern Canada—Ontario—Quebec—Maritimes.
S. F. BACHER & CO., 310 Spadina Ave., Toronto, Ont.

SEND FOR NEW 1941 CATALOG to Dept. A10

Searching For . . .

More Profitable Business?

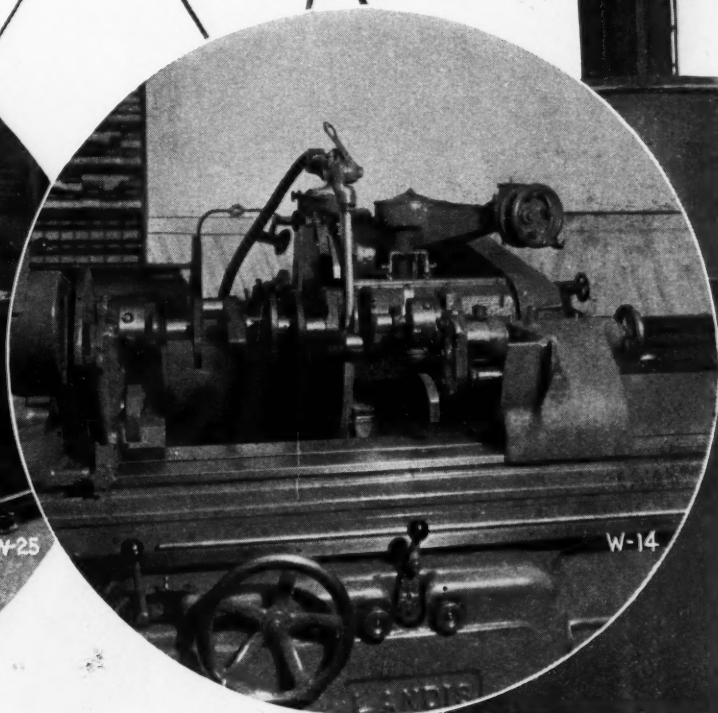
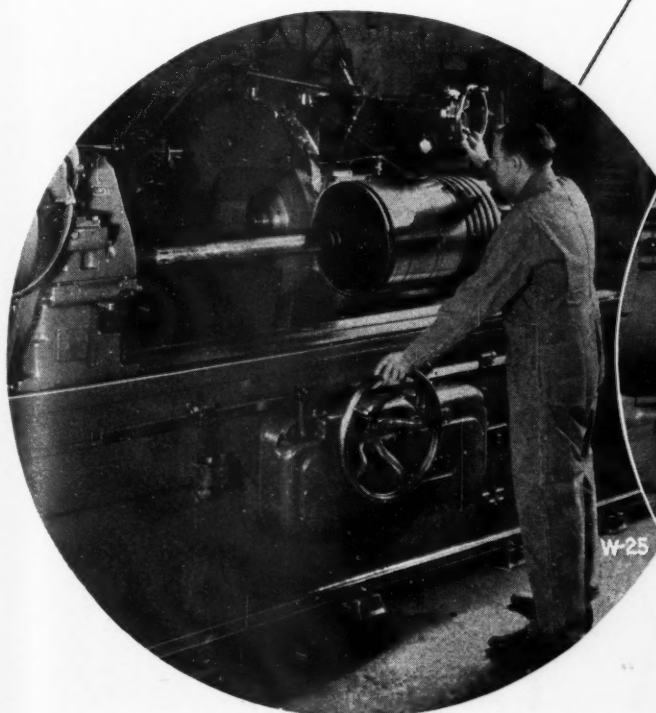
If you are, your search has ended. Being interested in reconditioning you know that the regrinding of various automotive engine parts such as crankshafts, camshaft main bearings, valve faces, pistons, bushings and many others, is a very large, very profitable business—a business, however, that demands suitable grinding equipment. ¶ The Landis Tool Company supplies that in the 18" x 66" and 22" x 72" Type C Hydraulic Crankshaft Regrinding Machines. With complete equipment the 18" x 66" machine will not only grind the parts mentioned above but will also internal grind parts such as transmission gears, small air compressor cylinders and bushings. This versatility is bound to result in increased business and increased profits.

Below are pictured two Landis regrinders in two very successful Automotive Reconditioning plants. The one on the right is regrinding the pins of a crankshaft; the one on the left is grinding a large Diesel engine piston, illustrating the wide variety of jobs that can be performed on Landis grinders. Investigate. Send for free catalog W-39 to

345

LANDIS TOOL CO.

WAYNESBORO, PENNSYLVANIA



"Gentlemen... meet



a Money Magnet!"

Gentlemen . . . here's a magnet that attracts *money* the way a corn field attracts crows!

Pulling Point No. 1 is a car that's *new* from roof to road! A brand new 1941 Packard that is a real, 24-carat sensation!

Pulling Point No. 2 is Packard's new "Dealer Participation" Franchise, featuring a sliding-scale discount that will gladden your heart!

Your first glance at the new 1941 Packard will show that here is the *newest* and *smartest* car on the road!

BRIMMING WITH BEAUTY . . . BURSTING WITH NEWS!

The 1941 Packard is really new! Longer! Lower! Completely restyled . . . "*luxury*" the watchword! Stunning new Multi-tone combinations inside and out.

NEW! ELECTROMATIC CLUTCH!

The *car itself* operates the clutch! Packard's Electromatic Clutch is simple, inexpensive—and lets the driver use Electromatic or standard clutch at will.

NEW! AERO-DRIVE DOUBLES FUN OF DRIVING!

Packard's new Aero-Drive lets the engine turn *27% slower*! Cuts gasoline consumption up to 20%!

NEW! PASSMASTER ENGINE! CUTS FUEL COSTS 10%!

Another 1941 Packard achievement: the Passmaster Engine!

We've cut the already-low gasoline consumption of the Packard power plant as much as 10%!

NEW! AIR CONDITIONING! A PACKARD FIRST!

No mere ventilating device . . . *real refrigerated* air conditioning with circulating, filtered, dehumidified air!

All told, there are *64 new features*!

NEW! GENEROUS SLIDING-SCALE DISCOUNT!

Starting with a generous basic discount, your discount *goes up quickly*! For Packard's brackets are *smaller*! You sell your 11th car . . . and up goes your discount! It goes up again with your 21st car . . . and again with your 31st car! You reach the maximum discount a *whole lot sooner*. And it's a *big* maximum discount!

DON'T DOUBT US THIS TIME!

Last year (remember?) we told you Packard was going places. Some folks were Doubting Thomases. Yet the record shows Packard sales jumped 65% against the industry's 30%.

Now we're telling you again . . . Packard is on its way! You're open-minded . . . so get the whole story . . . then judge. Fill in the coupon, give it to your local telegraph office and say, "Send it Collect." We'll rush you the complete story of our "Dealer Participation" Franchise . . . it's a dealer's dream come true!

PACKARD

THE CLASS OF '41

ASK THE MAN WHO OWNS ONE

NO OTHER FRANCHISE OFFERS ALL THESE FEATURES!

- 5 new cars . . . 5 "news" cars.
- Smaller Brackets . . . High Discounts.
- Protected Sales Area.
- Distributors who carry cars and parts in stock.
- Retail-minded men to work with.
- Profit . . . on small volume as well as big volume!
- Complete Market Coverage . . . low price to high price.
- Outstanding Advertising and Promotion.

☐ Telegram ☐

W. M. PACKER,
Vice-President of Distribution,
Packard Motor Car Company,
Detroit, Mich.

Please tell me more about Packard's attractions.

Name

Street

City State

History of Artificial Light

The story of artificial light, starting with the primitive torch, going on to the flickering kerosene lamp which the automobile first adapted from the horse-drawn carriage and leading up to the Sealed Beam Headlight, one of the latest in the many efficient automobile developments, is told in OPTICS AND WHEELS, the most recent of a series of a series of research-type booklets published by General Motors for gratuitous distribution to interested lay readers.

The Sealed Beam Headlight, introduced on 1940 automobile models as

the result of a cooperative project undertaken jointly by the automobile industry, lamp manufacturers, motor vehicle commissioners and highway safety groups in the interest of safer night driving, had these seven major objectives:

(1) It must provide the safest possible seeing under all night-driving conditions, hence a two-base system; (2) must provide relief from glare when meeting other cars, hence a passing beam; (3) must be easy to operate, hence a left foot switch for changing and an upper beam indicator; (4) must maintain its lighting efficiency; (5) must be simple to ad-

just; (6) must have simplified parts distribution to facilitate immediate replacement service; (7) must simplify work of officials responsible for laws and traffic regulations.

Wage-Hour Test Case

National Automobile Dealers Assn. will seek to obtain clarification of the status of automobile dealers under the Wage and Hour Act by participating in the defense of a suit initiated by the Wage and Hour Administrator against a Dallas, Texas, dealer. This decision was reached at a meeting in Detroit, September 14, of the Wage and Hour Committee of the Association which also comprised representatives of the A.T.A.M.

Charles W. Bishop, general counsel of N.A.D.A., and special counsel for the Wage and Hour Committee, will supervise the defense proceedings.

John H. Munson

John H. Munson, 76, Hollywood pioneer, and one of America's first manufacturers of automobiles, died in Los Angeles September 3 of complications following an accident July 12.

For 14 years, Mr. Munson was vice-president and general manager of the Munson Co., of La Porte, Ind., established in 1891. In 1909, following failure of the company, he came to Los Angeles and engaged in real estate, fruit ranching, and later established a collection agency here. In 1930 he invented the Munson Reflecting Hub Cap, on which he held patents.

Bendix Appoints Wheels, Inc.

The Bendix Products Division of the Bendix Aviation Corporation, South Bend, Indiana, have recently completed negotiations with Wheels, Incorporated, of New York and Newark, to assume the distributorship of B. K. Vacuum Power Brakes for passenger cars and trucks.


John F. Creamer, President of Wheels, Incorporated, recently announced that it is planned to hold a series of educational meetings on the subject of Vacuum Power Brake applications as used in the current design of motor vehicles during the early fall. These schools will be made available to the commercial vehicle operators and the dealer trade as well as those organizations specializing in brake and power brake service.

As sub-distributors operating under Wheels, Inc., in the metropolitan area, negotiations have been completed with Smith & Gregory, Inc., in Manhattan, Thomson Hill Brake Service in Long Island City, B & J Auto Spring Co. in the Bronx, Oakwood Motors in Mount Vernon, and Walter F. Wheeler at Poughkeepsie.

Save up to 40¢ per dollar of Mechanic's Payroll!

WITH

HYPRESSURE JENNY Steam Cleaner



The time unwillingly lost by your mechanics in wiping grease and dirt from parts, motors, chassis, tools, and hands during repair work costs you as much as 40¢ out of every payroll dollar! HYPRESSURE JENNY Steam Cleaner ends this loss and quickly pays for itself out of savings. It enables you to turn out more work per man and sell extra profit-service jobs such as motor and chassis cleaning. HYPRESSURE JENNY with unskilled

labor cleans a whole motor block in 10 to 15 minutes, and all other parts equally fast. Mechanics then work without waste time or lost motion, and at lowest cost. Floors, grease-pits, walls and exteriors of service stations can be kept clean and safe with HYPRESSURE JENNY at lowest cost. Fill in the coupon and find out how much added profit you can get!

HOMESTEAD VALVE MFG. CO.
P. O. BOX 95 CORAOPOLIS, PA.

SEND FOR THIS
FREE SURVEY
TODAY!

O. K.— Send that Survey.

We recondition, repaint, repair.....cars or trucks monthly.

We employ.....mechanics on dirty, greasy repair work.

NAME.....

ADDRESS.....



**THEY SELL
EASIER**

**AND SATISFY
YOUR CUSTOMERS**

**by giving greater
protection and
double the mileage**



**TELL YOUR JOBBER SALESMAN -- "SEE WHAT
I NEED IN THE WAY OF WEED CHAINS. I
DON'T WANT TO WATCH THE PROFITS GO BY
ME WHEN IT STARTS TO SNOW. I CAN USE
SOME EXTRA PROFITS MYSELF."**

**SAFETY AUTHORITIES ARE URGING PEOPLE
TO USE TIRE CHAINS. REMEMBER LAST
WINTER. AT LEAST BE PREPARED WITH A
WEED CHAIN PROFIT PACK.**

In Business for Your Safety



free...

**Drop us a postcard for
kit of Sales Helps.
Includes the Weed Chain
Snow Girl display,
counter cards and "give
aways." Supply limited.
Write today.
American Chain & Cable
Company, Inc., York, Pa.**

**WEED AMERICAN
Bar-Reinforced
TIRE CHAINS**

Stewart-Warner President Pledges Men and Machines

James S Knowlson, president and board chairman of Stewart-Warner Corp., has offered company personnel and manufacturing facilities to the country for defense. This was made known in a statement issued last month by the corporation head.

"This is a business made up of real Americans," Knowlson said, "and each and every one of us wishes to do his part in the coming months or years, for we realize that as a Nation we are in the most serious times we have ever known."

"We and others like us are American industry.

"There has been a lot of bunk about industry in the last few years. The talk still goes on. Statements are in circulation today to the effect that American industry is holding back; refusing to cooperate with the Government; demanding large profits. Some people believe this.

"If your friends ask you," the president said, "what your company has done so far, you can tell them this:

"Your company has bid (on a competitive basis) on ten millions of dollars of Government work against many other companies.

"So far we have been awarded approximately two million dollars worth of Government contracts. We have already begun making delivery on some of these contracts. The prices at which they were taken are such that up to July 31, we lost \$60,000 on what we shipped. This loss represents what we have paid out of our own pockets to learn how to do the job. That is not profiteering. . . ."

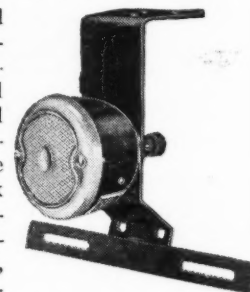
Grey-Rock Sign

Capitalizing on the fact that outside wall space is at a premium in most shops, the United States Asbestos Division of Raybestos-Manhattan, Inc., Manheim, Pa., has available for its dealers a long and narrow "Thin Man" sign for use on pillars and other vertical spots where a sign of this shape could be advantageously placed. The sign is of metal in three colors, and advertises Grey-Rock balanced braksets for service stations.



Tail Lamp Extension Bracket

A stop and tail lamp assembly, especially designed to be mounted almost anywhere on the rear of a truck body, is announced by Do-Ray Lamp Co., 1458 S. Michigan Ave., Chicago, Ill. The unit consists of a regular Do-Ray tail lamp and license bracket assembly, together with a special extension angle bracket. The angle bracket permits the unit, Do-Ray No. 1214, to be mounted anywhere on the truck to avoid smashing in backing and at the same time to clear most obstructions. It can be placed either back under the truck body or on top of panel trucks where the laws permit.



Toll Bridge Stops Troops

There's more than one way to stop an army, as the Maryland National Guard has found to its inconvenience.

With 300 trucks the Maryland guard started out to summer maneuvers in New York State. When the motorized troops came to a toll bridge over the Susquehanna River, they were informed that they could not pass without paying. No money had been authorized for payment of tolls, so the troops were rerouted to avoid the bridge.

WESTERN UNION

C21 63 NT COLLECT, 51 NEWYORK 4
F M WHITE.

BURD PISTON RING CO.

HENRY BANKS DRIVING A STRICTLY STOCK AUTOMOBILE USING BURD PISTON RINGS WON THE TWO HUNDRED MILE RACE AT LANGHORNE PENNSYLVANIA TODAY ESTABLISHING A NEW WORLD RECORD STOP COMPRESSION TESTS WERE MADE BY THE TECHNICAL COMMITTEE OF THE AMERICAN AUTOMOBILE ASSOCIATION AND A DEFINITE INCREASE OCCURRED AFTER THIS GRUELLING TEST ON THE ONE MILE DIRT SPEEDWAY PROVING THE WORTHINESS OF THESE PISTON RINGS.

RUDY ADAMS

WESTERN UNION

VM53 41 DL COLLECT 2 EXTRA KC, RUTHERFORD NJ 6 152P

BURD PISTON RING CO.

ATTN MR LUNDGREN.

BILL FRANCE DRIVING A 1939 CENTURY BUICK EQUIPPED WITH BURD PISTON RINGS TOOK SECOND PLACE AT 200 MILE LANGHORNE NATIONAL CHAMPIONSHIP RACE. OIL LEVEL WAS MAINTAINED. THROUGHOUT RACE WITHOUT ADDITION ALTHOUGH S.A.E. 10 WAS USED.

RED VOGT

Delayed but undismayed by a crash into the fence on his 2nd lap, Henry Banks went on after lightning repairs, recouped the lost time . . . lead-footed his *Burd*-equipped Buick coupe clear through the crowded field of 36 stock cars to win the 200-mile grind at Langhorne, Pa. . . . clipped 10 minutes and 15 seconds off the record. Into second place rode defending National Stock Car Champion Bill France in another Buick, also *Burd*-equipped. If you repair "stock cars" . . . or if you sell parts for "stock cars" . . . take a tip on piston rings from this smashing 1-2 victory and use *Burd* Piston Rings.

BURD PISTON RING CO.
ROCKFORD, ILLINOIS

"Gnaf-Flox"
PISTON RINGS

The Newest New Car of the Year!



DE SOTO DEALERS HAVE 1941's BIGGEST PRODUCT STORY—1941's BIGGEST DEMONSTRATION FEATURES!

New De Soto Fluid Drive

WITH

Simplimatic Transmission

DESOTO DEALERS CAN OFFER AND DEMONSTRATE AUTOMATIC SHIFTING FOR ALL NORMAL DRIVING!

New Rocket Bodies—17 feet, 4 inches of beauty that sells on sight!

New 2-Tone Interiors—Everything in gorgeous color harmony.

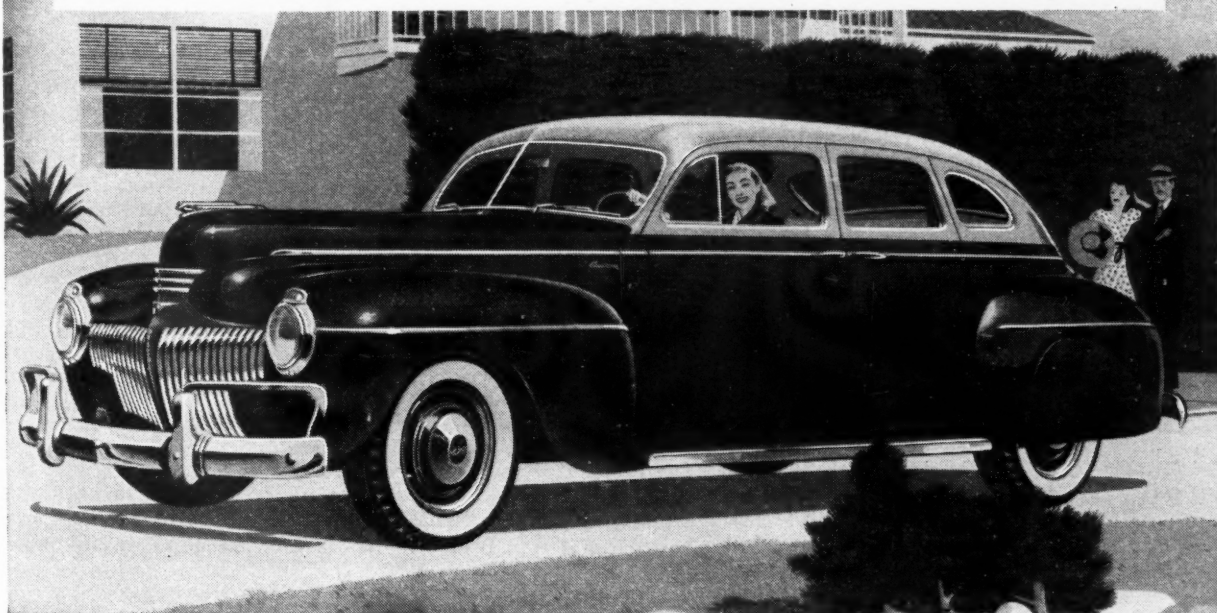
105 H. P. Super Economy Engine—Power stepped up for better performance with economy!

New Shockless Steering—Prospects notice easier handling!

New Sturdy Box Section Frame.

Safety Rims on Wheels—to prevent throwing of flat tires.

Heavy Duty Oil Bath Air Cleaner • Counterbalanced Luggage Locker Lid • New Rear Stabilizer Bar • Hood with Inside Lock • New Engine Bearings (300–500% longer life) • Overall Length 207½" • Front Doors with Hold-Open Device • Superfinished Engine Parts.



YOU HAVE JUST READ big news—a short, short version of '41's biggest product story. De Soto is set to sweep the country from coast to coast! And De Soto dealers are

set to make their biggest profits! DeSoto dealers have also a beautiful low-priced Plymouth to sell! Write L. G. Peed, DeSoto Division of Chrysler Corporation, Detroit.

DE SOTO

General Motors Prepares To Make Machine Guns

"General Motors already has plans well under way for the manufacture of machine guns for which a contract has just been awarded to us by the Government," C. E. Wilson, Acting President of the Corporation, said last month.

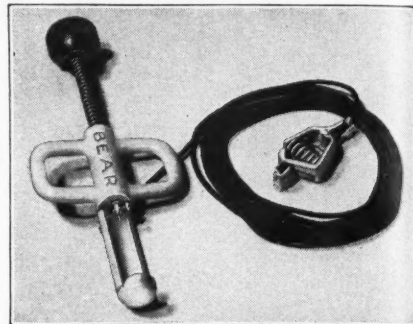
Wilson announced that the guns will be manufactured by four General Motors Divisions, where the making of the guns will be localized in

separate sections of the plants, but where trained personnel with experience in both precision and quantity manufacture will be available to expedite production.

The contract amounts to \$20,000,000 for equipment and \$61,319,872.19 for the guns themselves. The work has been assigned to the following Divisions of the Corporation: Saginaw Steering Gear Division, Saginaw, Mich., AC Spark Plug Division, Flint, Mich., Frigidaire Division, Dayton, Ohio, Guide Lamp Division, Syracuse, N. Y.

Indicates Defective Wiring

A new Jumper Lead recently perfected by the Bear Mfg. Co., Rock Island, Ill., enables you to show the car owner the voltage loss in his light wiring. The Bear Jumper Lead is



easy to use—attach the clamp at either the battery end or the starter switch end of the battery cable, and complete the circuit at the headlight using the 11-ft. lead and clamp supplied with the tool. If the wiring is defective, the candle power increases noticeably, showing very plainly on the modern headlight tester with an output meter.

"King" Motor Flusher

The Electric Heat Control Co., 9123 Inman Ave., Cleveland, Ohio, announces the "King" Air-Oil Motor Flusher. Operating with compressed air, the new flusher is said to break



The
**AIR-OIL
BREAKS UP
THE
SLUDGE**
Patented

up gum or sludge that otherwise would not be removed. The air jet is adjusted for both height and direction which permits washing any part of the crankcase. The manufacturer states that a flushing job can be done with the new Air-Oil Flusher, using less oil than normal capacity. Price \$24.75.

William T. Barton has been appointed purchasing agent of the American Bosch Corp. according to an announcement made by the management. Barton, who succeeds Joseph F. Drennan, newly appointed purchasing agent for the city of Springfield, Mass., has been connected with the company's purchasing department for the past 18 years and held the position of assistant purchasing agent.

TUNE-UP COOLING SYSTEMS

WITH

WONDERSOLV

THE MODERN SCIENTIFIC CLEANER
THAT PERMANENTLY REMOVES RUST



NO OVERHEATING . . . NO BOILING OVER This Winter for motors treated with WonderSolv. This new Deoxidizing Agent will clean all rust, scale and corrosion out of the cooling systems of cars, trucks or tractors and prevent further accumulation . . . mixes readily with Anti-Freeze. WonderSolv is a pure vegetable compound . . . no chemicals . . . no alkalis, action is slow but positive—works while you drive. Satisfaction is guaranteed or your money will be refunded.

WONDERWELD GASKETITE



The all-in-one Gasket Compound that gives a vibration proof, pressure tight seal, with or without gaskets. Gasketite will do anything any hardening compound will do except harden, connections disconnect without blasting, gaskets come off without a tear or crack. Unaffected by high-temperatures, gas, fuel-oil, water, steam or anti-freezes.

WONDERWELD

QUICK ACTING . . . PERMANENT
SEAL FOR CRACKED BLOCKS



It takes only 30 minutes to repair valve ports, water jackets, cylinder heads and inside cylinder cracks with genuine WonderWeld. Gives a metallic seal that holds everlastingly. Does not tie-up equipment, saves costly tear-downs.

FOR SATISFIED CUSTOMERS USE WONDERWELD PRODUCTS

See your Jobber or write

MILLER MFG. CO.

1220 KAIGHN AVE., CAMDEN, N. J.

Today's Top Value IN EVERY POPULAR PRICE CLASS

1941 HUDSON

WITH *Symphonic Styling*

Just think! You can pick the outside color you want and, without paying one cent extra, get an interior that harmonizes with it beautifully.



ONE OF the important reasons why more than 1100 dealers have changed to Hudson in the past 12 months is *full line coverage*.

A Hudson dealer can take advantage of every selling opportunity—he has a complete line-up of models, all outstanding competitive values, in every popular price class including the lowest.

Equally important, all the major Hudson advantages—the dramatic extra safety, performance, style and long life features that are a result of 31 years of engineering leadership—are found in every Hudson. Thus, even a Hudson priced down with America's lowest offers its buyers the colorful and harmonizing beauty of the year's big new style idea, *Symphonic Styling*.

Off to the earliest start in the 1941 season of any dealer organization in the industry, every sign points to the fact that Hudson dealers will enjoy another year of record sales increases (Hudson's 1940 sales gains were the most rapid of any major automobile company).

Why don't you investigate the sales possibilities of this great new 1941 line...and the profit possibilities of the Hudson 1941 franchise? Your wire or letter will be answered promptly and in confidence.

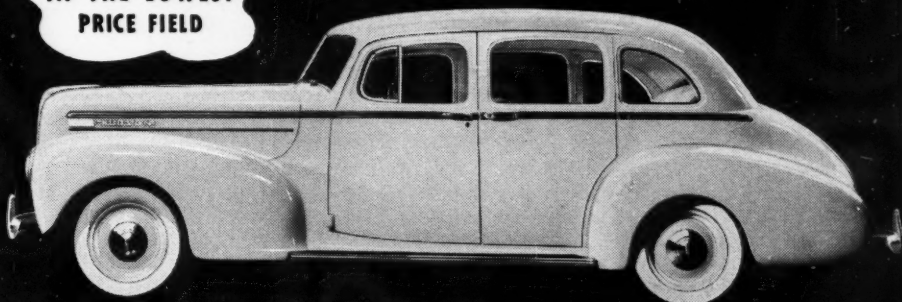
**HUDSON MOTOR CAR COMPANY
DETROIT, MICHIGAN**



*delivered in Detroit, including Federal taxes, not including state and local taxes, if any. Optional equipment and accessories extra. Hudson Six DeLuxe Sedan illustrated, \$856; (Hudson Six Sedan, \$793); Super-Six 6-passenger Club Sedan illustrated, \$901; Commodore Six Sedan illustrated, \$994; white sidewall tires extra. Low time payment terms. Prices subject to change without notice.

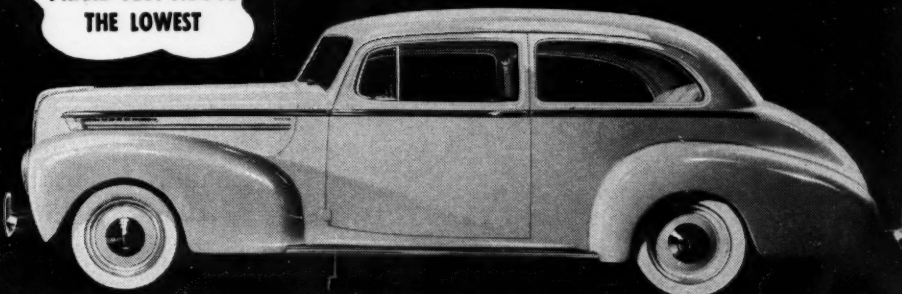
Brilliant new design...and, for the first time in low priced cars, a wide choice of interior color combinations that harmonize with exterior colors...AT NO EXTRA COST!

IN THE LOWEST
PRICE FIELD



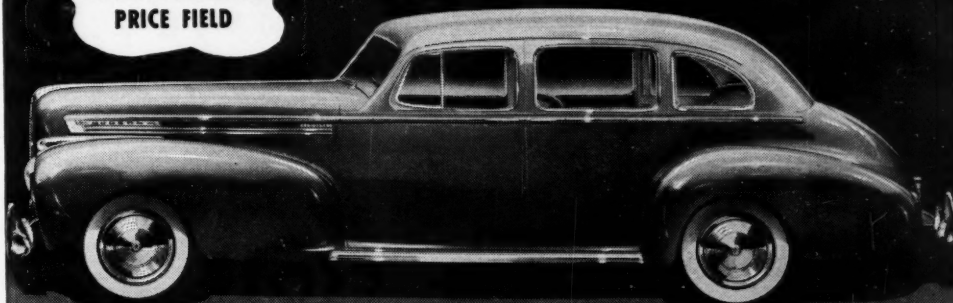
NEW HUDSON SIX...PRICES START AT \$695*

PRICED JUST ABOVE
THE LOWEST

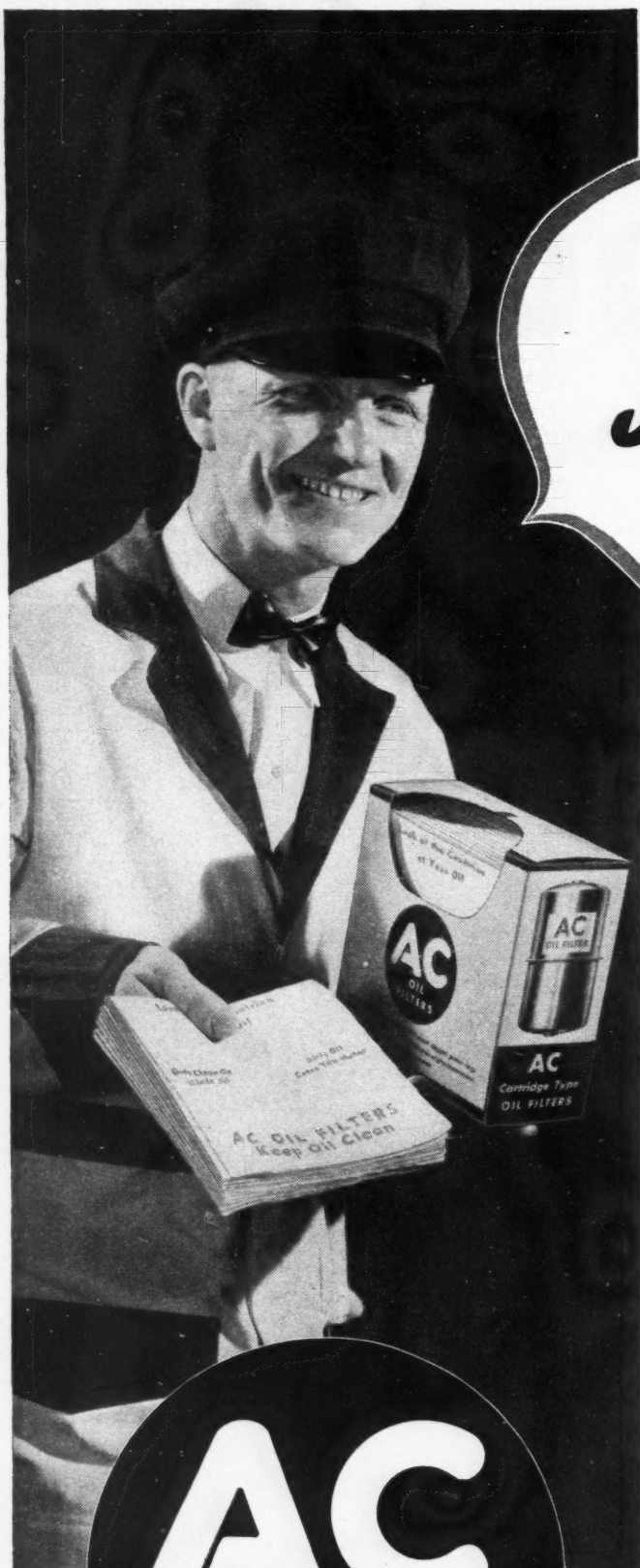


NEW HUDSON SUPER-SIX...PRICES START AT \$881*

IN THE MODERATE
PRICE FIELD



NEW HUDSON COMMODORE SERIES...COMMODORE SIX • COMMODORE EIGHT • COMMODORE CUSTOM
PRICES START AT \$935*



**"I HIT THE
JACK-POT
WITH THESE!"**

Operators of AC Oil Filter Service Stations *like* the AC "Oil Test Pads." They like them because these Pads make it easier to

**SELL OIL SELL ELEMENTS
SELL FILTERS**

One wipe of the dip stick gives *three* chances to make a sale. A dirty smear on the Pad shows that the oil needs changing. It also shows (with filter-equipped cars) that a new AC element or cartridge is needed. And it shows (with cars not equipped) that both an AC filter and an oil change are needed.

Remember,—AC backs these stations with powerful national advertising. It also gives each Station—FREE—these popular Oil Test Pads, an identification sign, window advertising, handout literature, and the most complete installation manual in the business.

**Use the "OIL TEST PADS" with EVERY CUSTOMER
—and watch oil and filter sales go up!**

Check with Your AC Wholesaler

Here's the AC EQUIPMENT PICTURE

(Standard or optional)

GMC Trucks; Greyhound and Flxible buses; Allis-Chalmers, Eagle, Gravelly and Ready Power tractors; Buick, Cadillac V-16, Oldsmobile*, and Pontiac* motor cars; Atlas Imperial and GM diesels; Continental and Gray Marine motors; Marion Shovels; Koehring road machinery; Brown and Sharpe machinery,—these are some of the vehicles, power plants, and machines on which AC Oil Filters are used for equipment.

**Optional*



AC SPARK PLUG DIVISION • General Motors Corporation • FLINT, MICHIGAN

Sealed Power Has New Oil Control Ring

Sealed Power Corp., Muskegon, Mich., has developed a new oil control ring to be known as RT-20. The outstanding feature of this new ring is a radius turned on the width of the contact lands. This radius provides a relief of .002 in. on the land which makes unit pressure of the ring against the cylinder wall for the initial area of contact. As the ring wears in, the .002 in. relief is gradually taken up so that the full surface of the land then contacts the wall. This radius also allows an "oil wedge" to form between the ring land and the cylinder wall which has the effect of providing forced lubrication for the area of high unit pressure during the running in process. The RT-20 oil ring is symmetrical in design so that it may be installed on the piston with either side up. This facilitates assembly and eliminates any danger of having the ring installed the wrong way.

Announces New Name

The Sterling Products Company of Detroit and Los Angeles, makers of the Sterling Speed-Bloc pneumatic sander and the Sterling Gyro sander, is now the Sterling Tool Products Company of 363 East Ohio Street, Chicago, as of Sept. 1, 1940.

In announcing the removal and name change, C. B. Johnson, formerly sales manager of Sterling Products, who becomes vice-president and general manager of the new corporation, stated: "Heretofore our factory and administrative office has been located at Los Angeles, and our general sales and service office at Detroit. The new arrangement will bring both units together and will greatly facilitate our service and production operations. There have been no material changes in our field sales organization."

The new organization will continue manufacturing and selling the Sterling Speed-Bloc pneumatic sander and the Sterling Gyro electric sander.

Graham Wins Stock Car Race

Competing against a field of seventeen entrants, a Supercharged Hollywood took all honors in the recent 125-mile stock car race held at Yakima, Wash., last month.

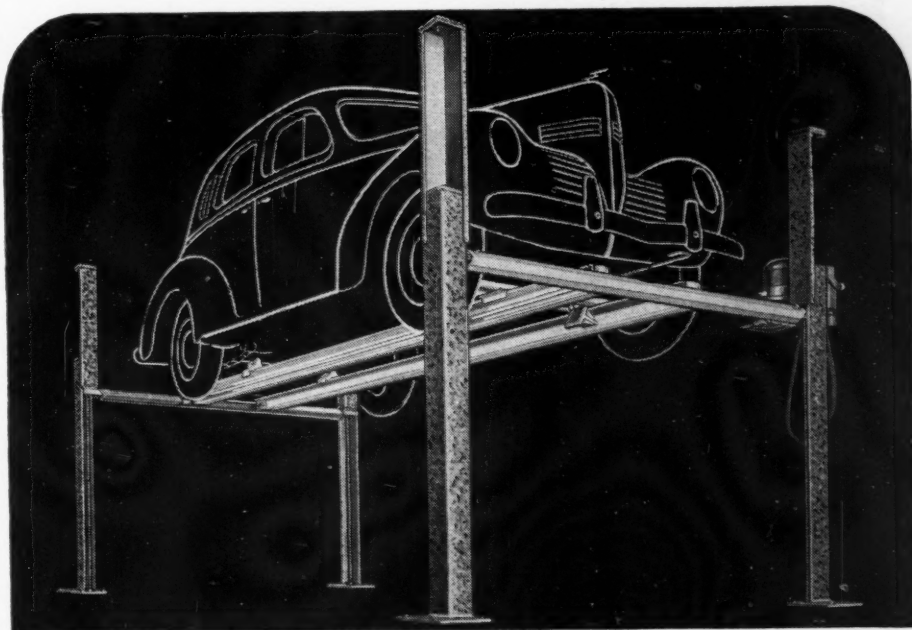
The Graham-built Hollywood, piloted by Holt Warrens, came in first three-quarters of a lap ahead of the field, used no water or oil and averaged 64 miles an hour on the mile-long track. Only two pit stops were made, and these only for gasoline. Warrens, an amateur driver, took delivery of the Hollywood on the Saturday preceding the race and had only the drive from Portland, Oregon, to Yakima to familiarize himself with the handling of the car.

Lavo Introduces Line Of Automotive Chemicals

The Lavo Company of America, 300 North Seventh St., Milwaukee, Wis., makers of specialized cleaners, has entered the automotive field with five items. The first is Lavoil soap dissolving system, Lavoil being a soap especially adapted to washing automobiles, showroom and office floors and walls; Lavo foam fabric cleaner, a shampoo type cleaner for automobile upholstery; Lavo cement cleaner for floors and driveways; Lavo solvent No. 29, a cold-cleaning solvent for automobile parts; and Lavo 77, a sudsless cleaner

for trucks and buses, recommended for interiors as well as exteriors—also acts as a deodorant and disinfectant.

Lou Moser has been named by the Weaver Manufacturing Co., Springfield, Ill., to succeed the late Robert A. Harper in the Chicago territory. Moser has been previously connected with Hastings Manufacturing Co. and other firms making automotive equipment. Harper was suddenly stricken with a heart attack on June 20 and died instantly. He had been Chicago representative for Weaver for the past three years.



We're for PAR Economy

Writes the GRAY MOTOR CO.
ROSSVILLE, IND.

WE HAVE had such wonderful service from our Par Electric Lift that we are writing you to let you know that in the entire two years that our lift has been in service, we have never had one bit of trouble or expense of any kind. We are more than pleased with the Par because it permits us to work at all points underneath the car with no obstruction.

SIGNED

H. E. Gray

See your jobber or write direct

MODERN EQUIPMENT CORPORATION
DEFIANCE, OHIO

- No pits to dig — no expensive emplacements.
- Positive safety—locks at any height.
- Four-point suspension —no center posts.
- Free-Wheel or drive-on models.

NEW 1941 CHEVROLET

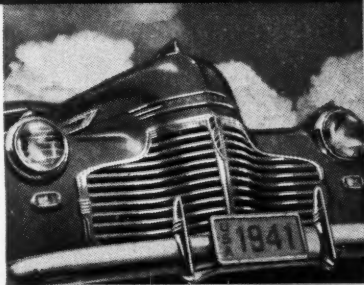


Eye It..Try It and you'll say it's
**"FIRST BECAUSE
IT'S FINEST!"**

Only the new 1941 Chevrolet offers all these quality features

THRILLING NEW BIGNESS

IN ALL MAJOR DIMENSIONS—It is SIZED UP beyond all expectations, both inside and out—made so impressively BIG and beautiful in all ways that it marks a two-year advance in one.



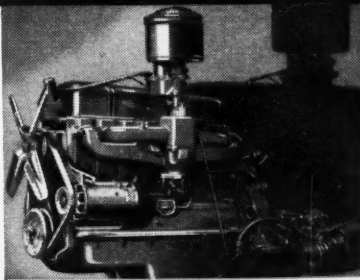
NEW LONGER WHEELBASE

A full 3 inches have been added to the wheelbase—making Chevrolet for '41 "the longest car the leader has ever built."



90-H.P. VALVE-IN-HEAD "VICTORY" ENGINE

Bringing you even more power, even more durability—and even greater over-all economy—than the famous Chevrolet engine which last year out-performed all others in its field.



LONGER, LARGER, WIDER FISHER BODIES

WITH NO DRAFT VENTILATION—With more foot room, more shoulder room, more seating room—with "3-couple roominess" in sedan models—with wider windshield and increased driver vision.



ORIGINAL VACUUM-POWER SHIFT AT NO EXTRA COST



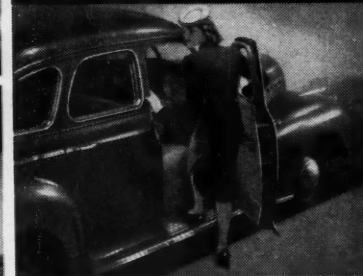
BUILT AS ONLY CHEVROLET BUILDS IT—80% automatic; requiring only 20% driver effort. Refined and developed to the point where it's recognized as "the world's easiest gearshift."

SAFE-T-SPECIAL HYDRAULIC BRAKES



Designed to stop quicker with less driver effort—to be completely under driver control—to last longer—and, above all, to be truly equalized and therefore truly safe at all times.

DASHING NEW "ARISTOSTYLE" DESIGN



WITH CONCEALED SAFETY-STEPS AT EACH DOOR—Featuring a massive new "Yankee Clipper" grille—swifter, smoother, smarter lines—two-tone colors on all Special De Luxe models*.

*OPTIONAL AT SMALL EXTRA COST

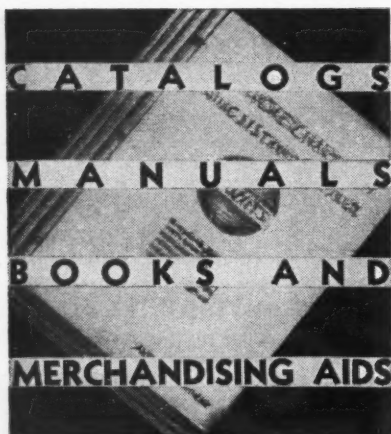
DE LUXE KNEE-ACTION ON ALL MODELS



WITH BALANCED SPRINGING FRONT AND REAR, AND IMPROVED SHOCK-PROOF STEERING—Providing big car comfort, big car roadability, big car safety.

AGAIN CHEVROLET'S THE LEADER

CHEVROLET MOTOR DIVISION
General Motors Sales Corporation
DETROIT, MICHIGAN



To receive a copy of the free literature mentioned in some of the following items, just check the square on the postcard on page 129 which corresponds to the letter given the literature you desire.

The Minnesota Mining & Mfg. Co., Saint Paul, Minn., announce the issuance of a new Sample and Net Price booklet covering items used by automobile repaint and repair shops in carrying out the 3-M system for ap-

pearance reconditioning automobiles. Samples of abrasives are enclosed with the booklet. Get your copy by checking "A" on the post card, page 129.

* * *

You'll find the solution for your radiator cleaning problems in the new 20-page booklet just issued by Oakite Products, Inc., New York City. The booklet describes a recently developed material, Oakite Compound No. 32, which the manufacturer claims is proving very effective in removing hard water scale and rust deposits from clogged radiators and cooling systems, heat exchangers, mechanical refrigerating equipment, and air and gas compressors. Your copy is waiting—just check "B" on the post card, page 129.

* * *

If you are looking for special tools to make hard jobs easy you'll find them in the new K-D tool catalog just out by the K-D Mfg. Co., Lancaster, Pa. Just ask for Catalog No. 20. Return the post card on page 129 to us with a check mark in the "C" square.

* * *

A new 32-page illustrated manual for servicemen has just been published by the makers of Ramco 10-Up piston rings, The Ramsey Accessories Mfg. Corp., 3700 Forest Park Blvd., St. Louis, Mo. The book is filled with "How-to-do-it" information, charts, tables and technical data. Normally priced at 50c., a special supply of these manuals has been made available to our readers. Put a check mark in the "D" square on the post card, page 129, and return it to us to get your copy.

* * *

Recent additions to the extensive line of Bear equipment for testing and correcting frames and axles, balancing and alining wheels and making all safety service tests and corrections are now included in the latest edition of the 64-page Bear catalog. A check mark in the "E" square on the post card, page 129, will bring your copy to you.

* * *

Unique in many details and innovations is a new catalog just issued by The Bunting Brass & Bronze Co., Toledo, Ohio. It gives complete information about a bearing, bushing or other part, including size and manufacturer's part number. Your copy is waiting. Check "F" on the post card, page 129.

* * *

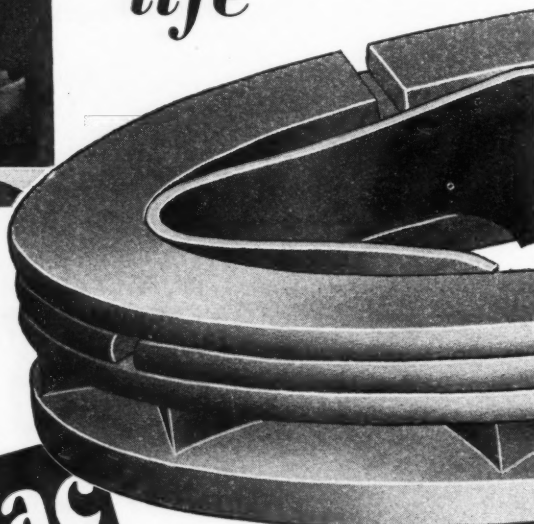
The F. W. Stewart Mfg. Corp., Chicago, has just issued a new catalog of their Circle-Ess speedometer parts, tools and equipment. Containing 150 pages, it is divided into five parts; speedometer parts, drive equipment, drive shaft equipment, cable casing specifications, and a general department for tools and special equipment. Get your copy by checking "G" on the post card, page 129.



"You bet your sweet life

you can depend on

Drān-Bac Oil Rings!



Licensed under patent 2148997

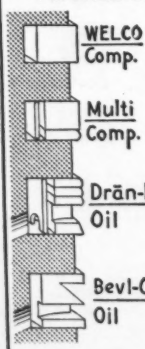
That's what Ring Specialists say everywhere about *Drān-Bac* Oil Rings! Precision-engineered, *Drān-Bac* Rings DEFINITELY peg a new high for dependable, long-lived performance. Their multiple wiping edges give continuous in-and-out, up-and-down "glove fit" FLEXING action, preventing carbon formation, assuring correct oil drainage, proper cylinder lubrication and actually s-l-o-w-i-n-g d-o-w-n cylinder wall wear! With no gap through the ring, blow-by and end flutter are minimized. No oversizes. Welco finished!

Be sure your next Ring Set includes *Drān-Bac*! Why be satisfied with less? *Jobbers, Ring Specialists*: Send for sample *Drān-Bac* ring or "H" Set . . . and details on our profitable proposition.

THE WEL-EVER PISTON RING CO.
Toledo, Ohio & Windsor, Ont.

WEL-EVER
TRADE MARK REGISTERED

Available in "H" Sets



"H" Sets too are dependable! Each ring engineered for its own special groove gives utmost compression and oil economy. Countless thousands installed without come-back.

124 Use AC OIL TEST PADS with your customers and watch your oil sales mount. They'll help your sales of AC OIL FILTERS too. Interesting feature on page 124. Write for details or check postcard.

125 The PAR ELECTRIC LIFT is pictured on page 125. Write Modern Equipment Corp. today for details or check postcard.

126 Read pages 126 and 127 and you'll agree that CHEVROLET presents one of the finest arrays of new car features of the year. For complete information write direct or check postcard.

128 for thoroughbred performance... choose a thoroughbred... DRAN-BAC "H" SETS. Install the RING that specialists depend upon. WEL-EVER PISTON RING CO. shows them on page 128. Write or check postcard for complete details.

131 Don't neglect thermostats in your check-ups this year. And don't neglect to read page — for news of DOLE'S THERMOSTATS. Further details may be had by writing or checking postcard.

136 For that extra performance and safety recommend and install FEL-PRO GASKETS. Your customers will recognize and appreciate their quality and efficiency. See page 136 for details. Write or check postcard.

137 Are you selling the PONTIAC "TORPEDO" FLEET for this year? If you are you're in the money! If not, by all means read page 137. For further information write or check postcard.

138 You're as safe as a baby when you're riding behind LIBBY-OWENS-FORD SAFETY GLASS. And your sales future is safe, too. Don't miss pages 138 and 139. Write for details or check postcard.

140 Farmer Jones bought a car in 1928 and... but you read the rest of TIMKEN'S story on page 140. You'll discover a new profit angle in the BEARING business. Write direct or check postcard.

141 PUROLATOR recommended for standard equipment by leading engine builders will build your profits to a new high. See page 141 for complete details. Write or check postcard.

142 The CRESCENT CO. offers you top quality and low prices in their WIRY JOE line of AUTOMOTIVE WIRING. The story is on page 142. For information on the famous DOSTAM METHOD write or check postcard.

143 Don't overlook those farmers and truck customers of yours. They're in the market for the OLIVER LINE and are asking for it. See page 143. Write for complete details or check postcard.

147 When you service your customers with JOHNS-MANVILLE BRAKE LINING, your only "comebacks" are satisfied customers. Don't miss the story on page 147. For further information write or check postcard.

149 The U. S. ELECTRICAL TOOL CO. shows you their three efficient UTILITY TOOLS on page 149. More profitable work in less time with these units. For complete information write or check postcard.

150A When NIEHOFF "tips you off" to cash in on the demand for safer lights with their IMPROVED LIGHT RELAY, it's worth checking on. See page 150. Write for information or check postcard.

150B For an effective hot OR cold tank cleaner try GUNK CONCENTRATE and discover the CLEANER of the year. The story's on page 150. Write the CURRAN CORP. or check postcard for details.

150C Your customers will appreciate this safe low-cost way to clean cooling systems... the OAKITE way. Don't miss the story on page 150. It's profitable. Write for details or check postcard.

151A For greater safety in adverse weather your customers will appreciate your recommendation of U-AD-CO'S FOG LIGHTS shown on page 151. For details write direct or check postcard.

151B Why give your customers rebuils when you can install an AIRTEX for the same price and still show a profit? CHEFFORD MASTER MFG. CO., INC., shows the AIRTEX features on page 151. Write or check postcard for details.

151C KESTER CORED SOLDERS give you the type of work that brings back satisfied customers. Don't fail to read the profit story on page 151. For further details write or check postcard.

152 THEXTON announces a new PISTON EXPANDER and opens the gateway to new and more profits from this business. The announcement's on page 152. For details write or check postcard.

153A Take a tip from the customer's story told on page 153. RAILWAY EXPRESS AGENCY can give you the same safe, efficient service. For further information write or check postcard.

153B Tune-up profits come faster and easier with the new NIEHOFF CURRENT VOLTAGE RESISTANCE UNIT. It's shown on page 153. Don't miss it. Write for further information or check postcard.

153C The AMERICAN GREASE STICK CO. gives you a valuable tip about RUGLYDE and DOOR-EASE on page 153. Your customers know and appreciate these items. For further details write direct or check postcard.

154A For faster, cleaner, more dependable work on those jobs requiring high tensile strength, quick-acting flux, uniform quality use GARDINER FLUX-FILLED SOLDERS. See page 154. For details write or check postcard.

154B WARNER-PATTERSON offers you a free item... a RADIATOR DRAIN COCK OPENER with a purchase of their products. Read about it on page 154. Write direct for details or check postcard.

154C You can't beat this SIGNAL-STAT COMBINATION... BURN-OUT PROOF SWITCH and DIRECTIONAL LAMPS. There is the key to increased sales and profits. See page 154. Write or check postcard for details.

154D When you're in the market for an efficient, economical, priced BATTERY CHARGER, don't overlook the "HANDY" mfd. by BALDOR ELECTRIC CO. Don't miss page 154 either. Write or check postcard.

154E The new SPEEDWAY 1/2" No. 89 DRILL will handle that job quicker and more efficiently. See page 154. For further information write or check postcard.

154F For the handiest FLEXIBLE CONTACT DRESSER try RINCK-McILWAINE'S FLEX-STONE and notice the difference. Don't fail to read page 154. For details write direct or check postcard.

154G G-E offers a FREE booklet on HEAD-LIGHT SERVICE on page 154. Are you getting your share of the profitable lighting trade? For further details see your salesman or write direct.

155A When your customers complain about hard starting or sluggish engines recommend TUNGSTEN'S SUPER CONTACT POINT. Don't miss page 155. Write for details or check postcard.

155B Fewer blades... same volume of cutting! You can achieve this saving in SAW BLADES when you use ATKINS BLADES in your shop work. See page 155 for details. Write direct or check postcard.

156A Why gamble with oily greasy floors that offer hazards to you and your customers? MAGNUS CEMENT CLEANER will spruce up your shop in a few minutes. See page 156. Write or check postcard for details.

156B For appearance, economy and safety... recommend SKINNER RETREADS to your customers. You'll profit and your customers will be satisfied. See page 156. Write or check postcards for details.

156C Are you missing a bet? Those extra profits from wheel-balancing would come in mighty handy. Don't miss the HARLEY C. LONEY CO.'s story on L & H WHEEL BALANCING WEIGHTS on page 156. Write direct or check postcard.

157A With G.A.C.'s new H-289 UNIVERSAL FENDER SPREADER you'll be able to take jobs you've had to turn away before. It's shown on page 157. For further details write or check postcard.

157B Is your shop "KING"-equipped for the money-making TESTING business? If not, the ELECTRIC HEAT CONTROL CO. gives you a few pointers on page 157. Write for details or check postcard.

158A When your customers are in the market for a GOOD BRAKE LINING... recommend SOUTHERN. Cash in on the SOUTHERN LINE. See page 158. For details write or check postcard.

158B Buy at the sign of the LION! Dependable quality AUTOMOTIVE PARTS, SUPPLIES and ACCESSORIES. See page 158. For further information write direct or check postcard.

158C FITZGERALD GASKETS offer profit opportunities which you've never realized. Stock a supply and watch your gasket sales mount. See page 158. For further details write or check postcard.

158D Don't pay more... get VALLEY Battery Chargers. See page 158. Write for free bulletins, or check postcard.

159A When you have a customer for horns, you'll profit by remembering BUELL'S line and selling it. There's a note on page 159. Write for complete details or check postcard.

159B For unmatched value and leadership GARDINER FLUX-FILLED SOLDERS recognize no superior. Quality workmanship demands quality materials. See page 159. Write for details or check postcard.

159C Save yourself time and money by using NOC-OUT HOSE CLAMPS made by the WITTEK MFG. CO. This handy and profitable item is shown on page 159. Write for details or check postcard.

159D Your customers will appreciate the added gas saving they can obtain through your recommendation of BLUE CROWN SPARK PLUGS by MOTOR MASTER PRODUCTS CORP. See page 159. Write or check postcard.

159E Get that new equipment you need the logical, economical way... through COMMERCIAL CREDIT CO.'S "ONE-CONTRACT" AUTOMOTIVE EQUIPMENT PLAN. See page 159. Write for details or check postcard.

159F ARO drops a few profitable hints on WHEEL BEARING SERVICE on page 159. Are you equipped to handle this line of business? It's well worth your time. Write direct or check postcard.

159G For profit... for service... it's TELEOPTIC the quality TURN SIGNAL. Your truck customers will be interested in this line of signals. See page 159. For details write or check postcard.

161 For the bearing with the longer life and more mileage you can't go wrong on NORMA-HOFFMANN PRECISION BEARINGS. Don't miss page 161. Write direct or check postcard for details.

162 Think of being able to offer your customers CADILLAC'S luxury and top-price quality at a MEDIUM-PRICED figure. The announcement's on page 162. Write for information direct or check postcard.

BY REPLACEMENT OF A NEGLECTED MOVING PART

Prevent Motor
CHILLS and FEVER with

DOLE THERMOSTAT

It pays to make a new thermostat a routine part of every cooling system check-up or motor tune-up Winter or Summer. Ask your jobber's salesman for complete line facts including details on new adjustable motor block type. Sell Dole Hose Line Types to step up hot water heater performance.

THE DOLE VALVE COMPANY

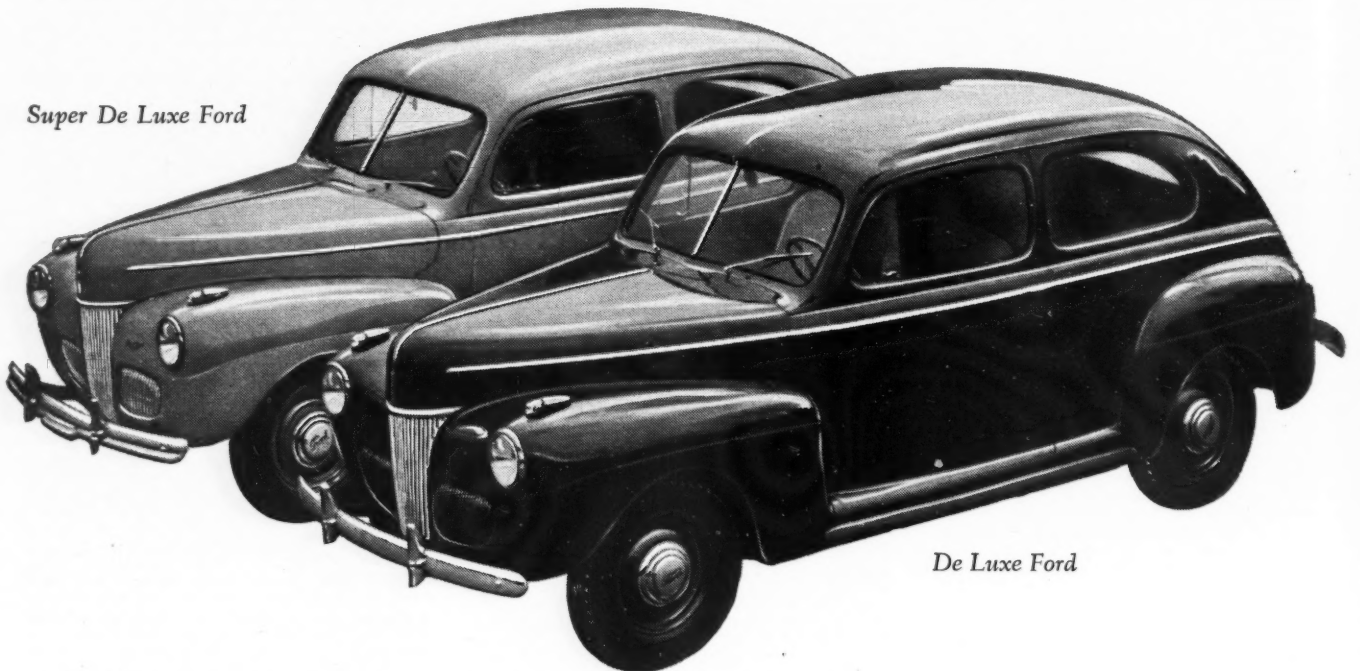
1901-41 Carroll Avenue, Chicago, Illinois

Motor Block Adjustable

(Advertisement)

Announcing the FORD CARS AND TRUCKS, MERCURY,

Super De Luxe Ford



De Luxe Ford

1941 FORD — In some years, and in some cars, automobile value takes a remarkable leap forward. 1941 is such a year for the Ford. It brings a new and larger Ford with a completely new and larger body. A new Ford so long, wide and smooth in its lines, so beautifully finished, you'd naturally take it for a high-price car.

The Ford has grown in all important dimensions. Wheelbase is increased to 114 inches. Seating widths are much

broader in all body types — as much as 7 inches wider in Fordor Sedan. Doors are wider. Windshield and windows are bigger. Glass area increased up to 33%.

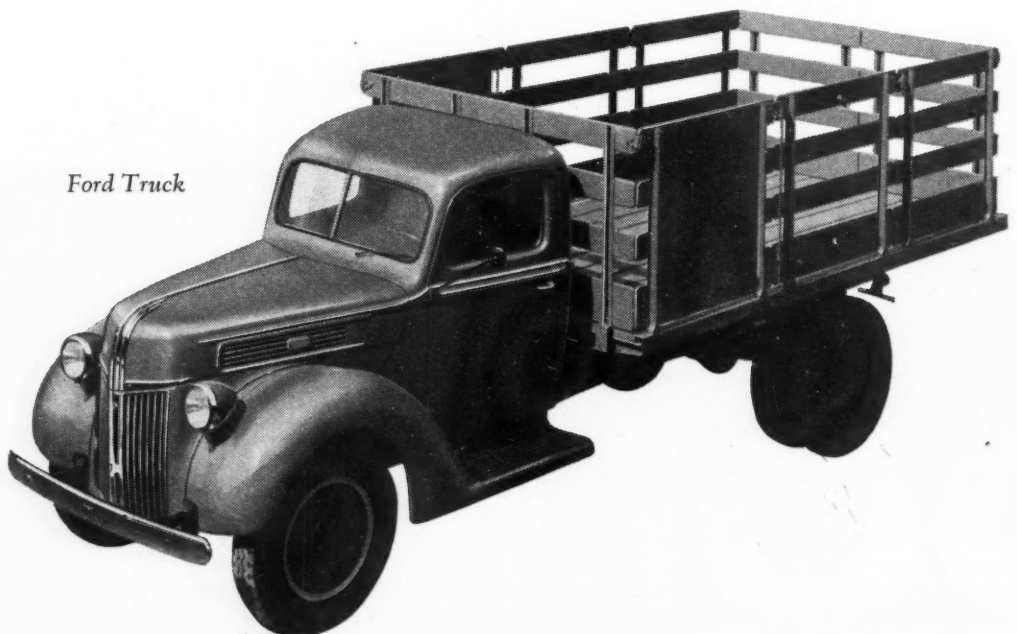
Everything connected with the *ride* is new — wheelbase, weight distribution, springs, shock absorbers, stabilizer. Acceleration is faster. The new frame is twice as rigid as before. There are dozens more facts you'll want to get — bright new colors, new body types, many mod-

ern features — combining to make THE BIGGEST FORD EVER BUILT the outstanding value in its field.

1941 FORD TRUCK — Good-looks and dollar-saving performance are combined in one dependable unit! The 1941 Ford line includes models for every purpose: 6 wheelbases, 42 body and chassis types.

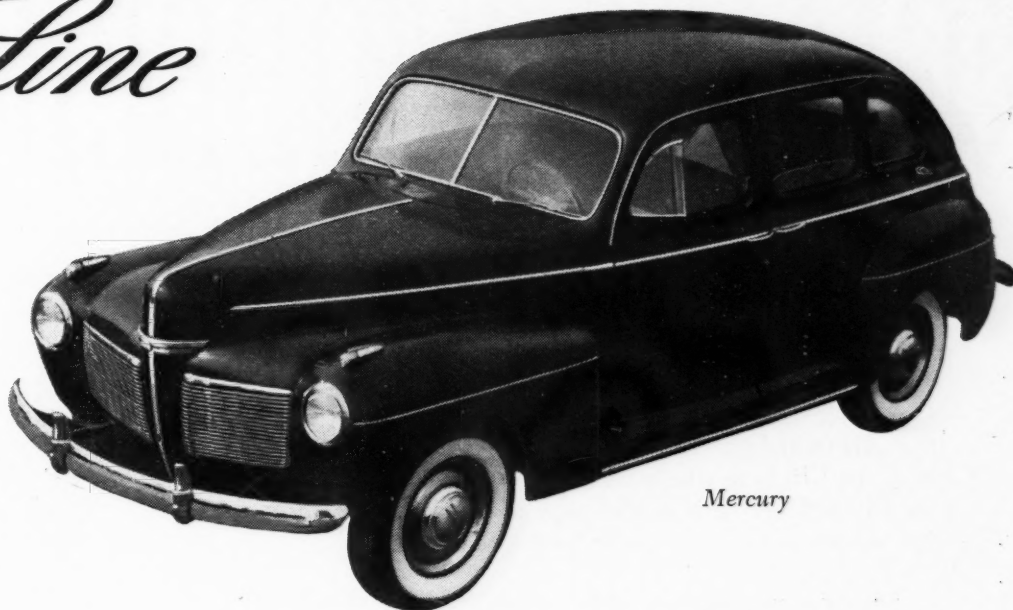
Here's *over-all* economy! More work, in less time, at lower cost. A choice of power: rugged 95 or 85 hp V-type

Ford Truck



1941 Line

LINCOLN



Mercury

eight-cylinder engines or the 30-hp super-economy four-cylinder engine.

1941 MERCURY — Introduced just two years ago, the Mercury has won nearly 150,000 owner-friends! When they found the Mercury a *big* car in all the good things the word implies, *and an economical car*, they spread its praise far and wide. They made the new Mercury one of the most popular cars in its field!

The 1941 Mercury adds to the new ideas that have made this car a name for comfort, for easy handling that is a revelation. It is a new and livelier car, a thrillingly big car — inside and out. Body and doors sweep out over the running boards. Windshield and windows are wider and deeper. New long wheelbase adds more spaciousness.

1941 LINCOLN-CUSTOM — A new car appears on the American scene. It is

the Lincoln-Custom, proudly presented by a builder whose cars for years have stood as the ultimate in automotive engineering. . . . The Lincoln-Custom is a large car, with a 138-inch wheelbase, and carries eight in comfort. Modern design and skilful streamlining draw inspiration from the style leader, the Lincoln-Zephyr. Smooth, quiet power is supplied by the famous Lincoln-built 12-cylinder engine.

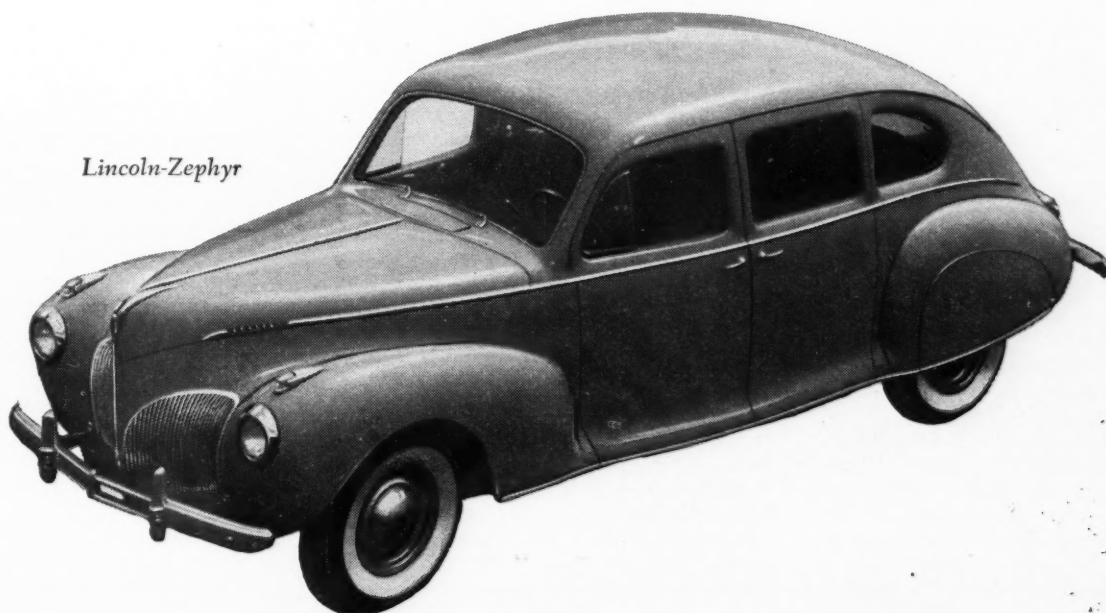
There are two body types, Sedan and Limousine. Interiors are supreme examples of the custom-builder's art. Through the years, the new car promises distinguished transportation.

1941 LINCOLN-CONTINENTAL — Every line of this new car, every move it makes, tells of far places and ease of reaching them. The Lincoln-Continental is true to a great heritage. It blends Lincoln precision and care with Lincoln-Zephyr

leadership in design. Its hood is three inches lower and seven inches longer than the Lincoln-Zephyr. The powerful twelve-cylinder engine, Lincoln-built, is especially finished—gleaming like a jewel. Every appointment is in keeping with so outstanding a car. Cabriolet, an automatic convertible, and a smart closed car, the Coupe.

1941 LINCOLN-ZEPHYR — The Lincoln-Zephyr offers ideas so advanced that they are not to be found outside the Lincoln family. The sparkling, thrifty 12-cylinder engine is the only one in the medium-price field. The famous unit-body-and-frame, in all closed types, offers a new standard of safety. The centrally balanced position of passengers, chair-high seats, and new, large interiors provide a gentler way to travel. Four body types, all style leaders — Sedan, Coupe, Club Coupe and Convertible Coupe.

Lincoln-Zephyr



What Every **JOBBER** Should

MOTOR AGE is a guide to greater profit opportunities for men who service and maintain the 30,000,000 motor vehicles on our highways. It is published exclusively for these men. Their purchases are the backbone of your daily sales—for servicemen are your best customers!

Service managers, shop owners and mechanics look to Motor Age, their "business bible" for timely aid and instruction on major service problems . . . for help in the selection of new tools and equipment . . . for up-to-the-minute information on parts, accessories and supplies. In fact, "what's new" in their business—comes to them from the pages of Motor Age!

In every issue of Motor Age, jobbers and their salesmen can find many subjects worth reading and discussing with their service trade. Consequently, the Editors of Motor Age have prepared a brief digest of important articles appearing within this issue. Read it through, discuss the articles in your sales meetings, and use them when you call on shop owners and service managers. Knowing Motor Age helps you to know servicemen better!

***T**his digest is prepared to help you understand the job that MOTOR AGE is doing for its readers. At the same time, you, too, can make the reading of MOTOR AGE doubly profitable by discussing its important articles in your daily contacts with the service trade:*

WINTER SERVICE FOR THE COOLING SYSTEM

This article treats all phases of the job involved in preparing the cooling system for winter driving. It calls attention to the necessity of replacing inoperative thermostats, leaking head gaskets, rusted or corroded side plates, deteriorated radiator hose, worn fan belts and the need of overhauling leaking water pumps. These things, the article points out, must be done, together with cleaning out radiator and engine block water passages with a good cooling system cleaner—before anti-freeze is added.



Furthermore, this issue contains the table of Cooling System Capacities for late model cars including 1941!

PRIVATE LIFE OF A BAD BRAKE

The inside story of what may be happening to the shoes and drums



when the serviceman tackles one of those "hard to adjust" brake jobs. Shoe and drum distortion leads to uneven lining wear and unsatisfactory brake performance. The story points out the necessity for truing brake drums and grinding lined shoes to match the contour of the drum.

MECHANICAL CHANGES ON THE 1941 CARS

With illustrations and captions, this feature presents the major mechanical changes and new features on the 1941 models. It gives the mechanic a preview of them, and whets his appetite for more detailed information which will follow in subsequent issues of MOTOR AGE. It calls attention to the extended use of oil-bath air cleaners and 10 mm. spark plugs as standard equipment. This study, combined with Tune-up Specifications (also included in this issue) supplies an up-to-the-minute mechanical survey of the new cars.

Then, there is a second feature, which pictures and reviews the new models themselves, highlighting each car manufacturer's line being introduced this month.



OUNCES COUNT IN WHEEL BALANCING

Unbalanced wheels cause many tire and steering troubles. This article gives the fundamentals of wheel balancing and emphasizes the need for proper equipment to balance wheels both statically and dynamically.

RAYON IN TIRES

Herein is discussed one of the latest developments in the use of rayon cord in the manufacture of tires. These tires are being used chiefly in bus and truck service but are gradually finding their way into the passenger car field.

HOLLYWOOD SUPER SERVICE

MOTOR AGE sent one of the top-notch West Coast photographers to review Muller Bros., Hollywood, Calif., super service activities. The result gives the serviceman-reader a close-up of one of the largest super service



operations. Of noteworthy importance is the fact that this super service outlet uses quick services to attract a steady flow of regular customers so that these same customers become prospects for other types of heavier

Know About MOTOR AGE

for October 1940

maintenance. Thus the gas pump, lubrication rack, car washer, tire and accessory display feed the repair department with engine, clutch, transmission and rear axle work, painting, body and fender repair, wheel alining and frame straightening.



PAINT MASKING SECRETS—UNMASKED

When touching up or completely spray painting a car, one of the preliminary jobs is masking. This illustrated study given details on how to mask for modern two-tone jobs, together with many other helpful hints.

CARBURETOR TUNE-UP

Another in the series of step-by-step pictorial studies giving the exact procedure for servicing the Stromberg AAV-2 carburetor, a model used on many current car makes. This illustrated article simplifies the overhauling and parts replacement on this type of carburetor.

UNIVERSAL JOINT OVERHAUL

This gives detailed instruction for overhauling the Chevrolet universal joint and calls attention to the necessity for replacing worn parts.

CARE OF THE BATTERY

Here's a picture story about what happens to a battery through neglect



and abuse. A few examples, such as those illustrated, if displayed where the service station customer can see them, should stimulate battery sales.

POSTSCRIPT

In addition there is a reminder to the reader that now is the time to get busy and change to winter lubricants on customers' cars. Also, there are dozens of readers' queries, shop kinks and service suggestions—all of invaluable aid to the regular MOTOR AGE reader. Pages describing latest information on new tools, equipment, parts, accessories and supplies are likewise included in this issue.

HOW'S BUSINESS

A MONTHLY REPORT ON MAJOR ITEMS BY 500 JOBBERS

SEPTEMBER, 1940

| NATIONAL TOTAL | Good | Fair | Poor | NATIONAL TOTAL | Good | Fair | Poor |
|-------------------------------|------|------|------|---------------------------------|------|------|------|
| ACCESSORIES | Fair | | | SHOP EQUIPMENT | Fair | | |
| Abrasives..... | 45 | 90 | 16 | Battery Charging Equipment..... | 26 | 72 | 64 |
| Anti-Freeze..... | 57 | 59 | 35 | Car Lifts..... | 9 | 42 | 92 |
| Car Radio Sets..... | 6 | 32 | 59 | Car Washers..... | 4 | 27 | 106 |
| Car Radio Accessories..... | 6 | 25 | 60 | Compressors..... | 13 | 81 | 66 |
| Chains..... | 5 | 28 | 102 | Drills (Electric)..... | 21 | 96 | 56 |
| Heaters..... | 18 | 83 | 59 | Electric Testing Equipment..... | 16 | 60 | 78 |
| Horns..... | 6 | 54 | 83 | Jacks (Garage)..... | 40 | 93 | 39 |
| Lacquers..... | 86 | 72 | 17 | Lubricating Equipment..... | 27 | 82 | 55 |
| Oil Filters..... | 100 | 76 | 10 | Paint Spray Equipment..... | 22 | 76 | 66 |
| Oils and Greases..... | 21 | 75 | 36 | Tire Service Equipment..... | 3 | 29 | 106 |
| Polish..... | 28 | 113 | 35 | Tool K'ts and Sets..... | 17 | 72 | 64 |
| Seat Covers..... | 39 | 88 | 32 | Valve Refacers..... | 11 | 55 | 93 |
| Thermostats..... | 12 | 66 | 81 | Wheel Aligners..... | 10 | 41 | 87 |
| | | | | Wheel Balancers..... | 21 | 42 | 77 |
| REPLACEMENT PARTS | Fair | | | Safety Testing Equipment..... | 4 | 35 | 94 |
| Axle Shafts..... | 15 | 97 | 61 | Welding Equipment..... | 19 | 79 | 61 |
| Ball and Roller Bearings..... | 74 | 96 | 12 | | | | |
| Brake Lining..... | 85 | 91 | 12 | TIRES | Fair | | |
| Bushings..... | 31 | 95 | 43 | Casings..... | 11 | 48 | 27 |
| Chains (Timing)..... | 10 | 87 | 75 | Tubes..... | 18 | 59 | 24 |
| Clutch Plates and Parts..... | 83 | 74 | 19 | | | | |
| Fan Belts..... | 110 | 73 | 14 | ELECTRICAL UNITS | Fair | | |
| Gaskets..... | 130 | 52 | 6 | Armatures..... | 45 | 96 | 26 |
| Gears (Rear Axle)..... | 17 | 94 | 61 | Batteries..... | 93 | 74 | 13 |
| Gears (Transmission)..... | 33 | 100 | 39 | Cable (Battery)..... | 78 | 100 | 14 |
| Mufflers..... | 138 | 46 | 6 | Coils..... | 54 | 110 | 23 |
| Pistons..... | 38 | 101 | 38 | Other Ignition Parts..... | 73 | 101 | 15 |
| Pins..... | 53 | 97 | 27 | Fuses..... | 47 | 115 | 27 |
| Rings..... | 116 | 53 | 8 | Ignition Wire and Cables..... | 66 | 111 | 13 |
| Radiators and Cores..... | 6 | 44 | 80 | Lamps..... | 77 | 94 | 19 |
| Spark Plugs..... | 117 | 74 | 8 | | | | |
| Springs (Chassis)..... | 20 | 73 | 48 | | | | |
| Valves..... | 54 | 97 | 25 | | | | |
| Water Pump Parts..... | 70 | 92 | 16 | | | | |
| Engine Bearings..... | 117 | 52 | 8 | | | | |

MOST ACTIVE LINES

September 1940

1. Mufflers
2. Gaskets
3. Spark Plugs
4. Engine bearings
5. Rings
6. Fan belts
7. Oil filters
8. Batteries
9. Lacquers
10. Brake lining
11. Clutch plates & parts
12. Battery cables
13. Lamps
14. Ball & roller bearings
15. Other ignition parts
16. Water pump parts
17. Ignition wire & cables
18. Anti-freeze
19. Valves
20. Pins

November 1939

1. Mufflers
2. Gaskets
3. Rings
4. Water pump parts
5. Batteries
6. Anti-freeze
7. Engine bearings
8. Spark plugs
9. Fan belts
10. Battery cables
11. Thermostats
12. Oil filters
13. Lamps
14. Clutch plates & parts
15. Heaters
16. Ball & roller bearings
17. Brake lining
18. Ignition wire & cables
19. Other ignition parts
20. Lacquers

HOW ITEMS ARE RATED

"Most Active Lines" are chosen on the basis of the highest number of jobber reports indicating "Good" for the items selected among the twenty most active lines. "Activity" as used here has no bearing on volume, so the lists should not be interpreted as meaning the lines on which jobbers are enjoying the greatest volume. Most active lines are those which the greatest number of reporting wholesalers indicate are selling "considerably above normal" in their particular markets.

HOW TO READ THIS CHART

Information from which this chart is compiled is obtained monthly from a selected list of 500 wholesalers. Figures show the number of wholesalers reporting. Normal is taken as average sales for this month during the past few years.

Good—Sales considerably above normal.
Fair—Sales slightly above or below normal.
Poor—Sales noticeably below normal.

Successful Battery Campaign

The Prest-O-Lite "Nine Eighty Five" Fall Special consisting of a Group 1, a Low Ford and a Long Assembly battery has met with greater sales and enthusiasm than any promotional program in the company's 26-year history according to H. E. Komitch, vice-president.

Commenting on sales performance of the Special which has taxed production facilities to the limit, Komitch attributed its success to the fact that the three batteries as a unit fit 98 per cent of all cars, pack exclusive quality features and sell at a bargain

price. Backed by attractive merchandising helps at the point-of-sale, consumer advertising of the 985's signed with dealer's names appears in a nation-wide list of major city newspapers.

Servicemen Honored

Ford service department officials from Dearborn, and branch executives congratulated 150 Merit Club contest leaders from the Edgewater and Chester branches of the Ford Motor Company at a recent dinner in the Ford Motor pavilion at the New York World's Fair.

T. Naubert, head of the Ford service department, welcomed the winners at the dinner climaxing the half-way mark of the 1940 contest, while other speakers included W. K. Edmunds, manager of the Edgewater Branch; R. A. Pierce, head of parts and accessories department at Dearborn; and A. D. Maxwell, service supervisor of Edgewater Branch. R. A. Grant, service supervisor, headed the Chester delegation to the affair.

The Merit Club contest is open to service and parts and accessories supervisors of Ford dealerships. They are scored on points for efficient conduct of the service end of the business and for sales increases in the parts and accessories division.



IT'S LIKE Magic

When you need grease retainers, oil seals, gaskets or pump packing you want to order them *right now* without spending a lot of time hunting for the item you want.

That's where the time-saving "Magic" of this new 1940 FEL-PRO Grease Retainer Catalog enters your shop picture! All makes of cars are listed alphabetically. Easy-to-read listings show...car model...type of grease retainer material...number required...where used...etc. And photographs of all type of grease retainers show you exactly what you're ordering!

Put this ordering "Magic" to

work in your shop. Write for your FREE copy of this new 1940 FEL-PRO Grease Retainer Catalog.

USE THE FEL-PRO LINE FOR COMPLETE VITAL-ZONE PROTECTION!

By using FEL-PRO products for replacements you keep pace with modern automotive developments and meet the requirements of finer, higher speed car and motor performance. For FEL-PRO replacement gaskets are engineered to the same high standards as FEL-PRO gaskets used as standard equipment by leading car manufacturers.

FEL PRODUCTS MFG. CO.
1510 W. Carroll Ave. Chicago, Ill.



Send for your completely illustrated FEL-PRO Grease Retainer Catalog NOW!

Do-Ray Fog Lite

A new Glaseal Beam foglite, using a new all glass unit with white or amber lens is announced by Do-Ray Lamp Co., 1458 S. Michigan Ave., Chicago, Ill. It is designed to give users of foglites the advantage of the latest type lighting—powerful, long lived, perfectly focused beams to make driving safer in fog, snow and mist. Lamp housing is of heavy chrome plated metal with malleable iron bracket for strength. It has a special compensating device designed to accommodate any sealed unit regardless of variation in thickness. Special rotary switch with attractive plastic knob and 10 ft. of silver colored wire are supplied.



Leonard Spark Plugs in Sets

The Leonard Spark Plug Co., 148 Summit St., Newark, N. J., has announced special sets of spark plugs for Chevrolet cars. These plugs are made up in sets to cover the various



heat ranges suitable for Chevrolet cars, and have the gaps already properly adjusted, ready for installation. Sets can be purchased through your local jobber, or write to the manufacturer. Catalog of complete line will be sent upon request.

**Where do you
fit in...when
they talk
about tractors?**



WHEN your farmer car and truck customers get together and "talk shop," where do you fit in when the talk turns to tractors and power farming equipment? And when the time for action comes, where do you fit in when they *buy* a tractor?

Increased sales and added profits await the car and truck dealer who recognizes that the majority of farmers are three prospect farmers—equally in the market for tractors as well as for cars and trucks.

Why not introduce a modern, snappy line of tractors to your trade—the line of sturdy Oliver tractors, for instance. Headed by the sensational

Oliver Row Crop "70" with its modern, six-cylinder high compression engine, many proved automotive features such as starter, lights, belt pulley, and streamlined appearance, the "70" sells itself in showroom or field demonstrations. There are seven other Oliver models that will get you off to the right start towards your goal of getting your share of the tractor business in your territory.

Find out how easily you can widen your scope of business and your margin of profit with sturdy Oliver tractors. Write now to the address below for franchise information.

SELL ALL 3
CARS-TRACTORS*-TRUCKS

***STURDY OLIVER TRACTORS—OF COURSE**

OLIVER

FARM EQUIPMENT SALES COMPANY

400 WEST MADISON STREET • CHICAGO

An ANNOUNCEMENT

GENERAL MOTORS

recognizes the present emergency. It realizes its duty to the nation to advance in every way within its power the program of National Defense. It has already assumed most important obligations. But in addition General Motors believes that industry today has a second responsibility—one of vital consequence. American defense demands first call on those products of industry, both as to scope and volume, which are essential to protecting the nation against aggression. It also demands, even though the fact be less generally recognized, a sound and virile economy. One is the complement of the other. A sound economy is essential to the objectives of the defense program.

General Motors believes that the most intelligent approach to our current problem is to put the nation's resources to work in the production of the goods and services for our normal consumption to the utmost extent consistent with the maximum needs of our National Defense. Thus, we increase the total productivity of the nation. Thus, the economic burden of the program for National Defense is proportionately lessened. Thus, the economy is strengthened in its ability to carry on. With that objective achieved, then existing facts and circumstances can best determine further policies.

In line with its conception of this dual responsibility, General Motors presents at this time its 1941 offerings of motor cars. It has combined with the important responsibilities it has assumed under the defense program its normal responsibilities incident to our peacetime economy. The new line of motor cars is now on display before the critical judgment of the public at the Auto-

mobile Shows and in General Motors dealer showrooms in every community throughout the land.

It has always been the policy of General Motors to build into its products the greatest possible measure of value. It has created an engineering group which, from the very beginning of the industry, has made far-reaching contributions to technical progress. It has contributed importantly to the motor car's becoming the serviceable mechanism of today. From the electric self-starter in the early days down through the years, one engineering achievement has followed another. And in great variety: tilt-beam headlights, Duco lacquer finishes, crankcase ventilation, synchro-mesh transmission, Fisher No Draft Ventilation, Knee-Action wheels, Turret Top, automatic transmissions, steering column gearshift.

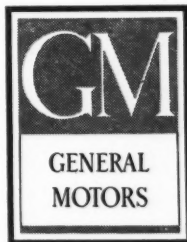
But that is not all! General Motors technicians have demonstrated their versatility by developing such engineering products as the Diesel locomotive, destined to revolutionize transportation by rail. The Allison engine—an outstanding development in aviation engine practice and now coming into mass production—is making an important contribution to one highly technical phase of the problem of National Defense. And in an allied field, tetra-ethyl lead as a component of gasoline has revolutionized the relationship of the fuel to the engine, producing more power with less weight and with greater efficiency. As a result, not an airplane leaves the ground today without in effect reflecting tribute to the technical capacity of General Motors. We are proud of this record of accomplishment. It is the accumulated experience of such an engineering group that has been built into the General Motors 1941 models.

In the different lines of motor cars comprising the General Motors offerings, there will be found countless refinements and innovations. Some in some cars. Some in others. But reflected to an important degree in all.

A technical improvement of importance is a new fuel system—Compound Carburetion. It is an innovation in motor car engineering practice. To the regular carburetion system is added a second, or supplemental, carburetor which can come into action when the driver requires additional performance. In effect, but not in principle, it is like the supercharger. The engineering benefits resulting from this achievement take the form of added performance and increased fuel economy. This is exemplified in Buick. It may make possible in the future the use of a somewhat smaller engine, at the same time maintaining equivalent performance and likewise giving increased economy.

A safety feature worthy of note, based upon the Unisteel Turret Top introduced by General Motors some years ago, consists of all doors being swung from the front. Thus they open against the windstream of a car in motion. This tends to eliminate the hazard of doors swinging open if accidentally unlatched. The same feature provides greater convenience for front and rear door passengers alighting from the car at the same time.

A year ago General Motors announced a new mechanism to connect the axle with the engine—the Hydra-Matic drive. You simply steer! The clutch is entirely eliminated. That is a most important feature. The changes in gear ratio or speeds are automatic. This device is designed to take the transmission out of driving technique. And it does! This has been exemplified in Oldsmobile. The outstanding acceptance of this Hydra-Matic drive as evidenced by the testimony of many thousands of enthusiastic users has had a stimulating effect in accelerating the industry's progress in this important field. Thus is progress broadened. In a more highly refined and some-



what simplified form the Hydra-Matic drive will be continued in the 1941 line. You certainly will be intrigued when you see and try this interesting mechanism.

But the modern motor car has become more than something from which to go from place to place. For many it is something to live with. Hence more comfort, more luxury of appointment and increased roominess characterize the new designs. General Motors 1941 cars are larger. The seats are wider. Thus there is more room for both passengers and baggage. The appointments are more luxurious. These should be important considerations in determining the motor car you will drive in 1941.

Nor is that all! The "Torpedo" type—the body sensation of 1940—has been continued with even greater appeal. And there has been added another body creation—the aerodynamic type. Everyone should see and try it!

General Motors cars of 1941 must be seen to be appreciated.

In making this announcement, we would be ungrateful if we did not express appreciation of the public endorsement and acceptance of the General Motors cars of 1940. Measured in relative sales of the industry, they reached a higher point than ever before in General Motors history. The value in 1940 was not easy to improve. Thus we faced a real challenge in our research, styling, engineering and production processes in preparing for 1941.

General Motors hopes that when you have seen and become acquainted with these 1941 motor cars you will be as enthusiastic about them as we are. And that you will get as great a thrill out of their interesting features, their performance, attractiveness, serviceability and utility as we have in their creation and in presenting them to you at this time.

Alfred P. Sloan
Chairman

GENERAL MOTORS CORPORATION

CHEVROLET • PONTIAC • OLDSMOBILE • BUICK • CADILLAC

Now Chilton Supplies

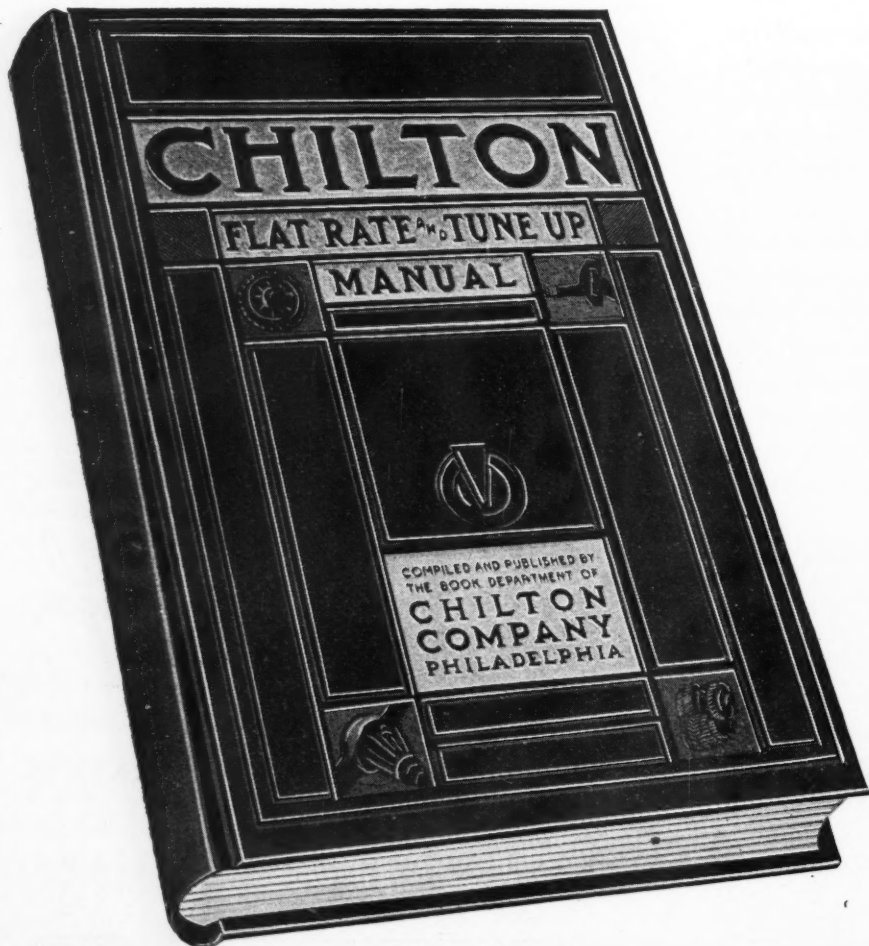
3 MANUALS in ONE

at the same price ~ \$6⁰⁰

CHILTON'S 1940 FLAT RATE

contains:

- A Manual of Flat Rate Labor and Material Prices
- A Manual of Service Procedure on Maintenance, Trouble-Shooting and Tune-Up
- A Manual of Brake Maintenance, Trouble-Shooting and Adjustments



As always—Chilton again leads in value, and new necessary information.

Here's VALUE

the Greatest Chilton ever offered!

- Interchangeability of Truck Units Data
- Completely redesigned Carburetor Section
- Bearing Oil Pressure Tests
- Torque Wrench Readings
- Cause of Brake Trouble—Methods of Correction
- Hydraulic Valve Lifters and Silencers
- More Parts Numbers and Prices. More Body and Frame Parts.

You Will Need

The Chilton Table that shows you the number of makes and models of Trucks that have Interchangeable Parts, and what those parts are, so you can shop around and get the best prices.

The most complete Carburetor Adjustment and Tune-Up Information ever supplied.

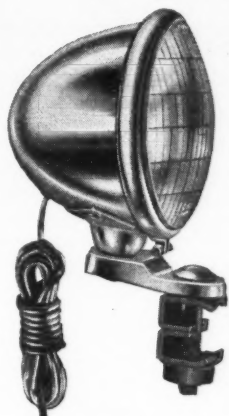
For some months now the Trade has requested Bearing Oil Pressure Tests. Here they are. Of great value also will be the Torque Wrench Readings.

Likewise new is the information on Vacuum Advance, which enables you to make a complete check of the types and models of these units in general use.

These are some examples of the new and important features that the Chilton 1940—14th Edition—will bring to you.

The 1940 Manual will bring you the usual Chilton completeness in covering everything needed by repair shops, and the accuracy that has made the Chilton Flat Rate and Service Manual the preferred authority in thousands of independent and car dealer repair shops.

*Wait for The Chilton Man,
or write—Chilton Company, 56th &
Chestnut Streets, Philadelphia, Pa.*



List, \$5.50 each
\$11.00 in pairs

Give Your Customers **REAL**
Light Satisfaction

SELL

**U-AD-CO Fog Lights for
Greater Safety in
Adverse Weather**

With the coming of fall and winter months, night driving, with all its hazards, including fog, will force motorists to seek more adequate lighting. If you are stocking the U-AD-CO line, you will be in a position to take advantage of this profitable business.

The U-AD-CO Fog Lights are equipped with Mazda All-glass amber lamps. Brackets are of steel, Chromium plated, with universal adjustment, and are supplied with theft proof nuts and bolts. These and other features assure customers satisfaction. No. UAL-125 Single. No. UAL-125A in pairs, with fuse control switch.

Scientifically designed to suppress to a minimum the scattered light above the main beam, directed to right side of road below eye level.

Write quickly for complete information. Also inquire about the new U-AD-CO Sealed Beam adapter Kits for Pre-1940 cars.

U-AD-CO AUTOMOTIVE DEVICES COMPANY

1018 South Wabash Ave.

Chicago, Illinois



Here's a fuel pump...

Correctly engineered for replacement on cars, busses and trucks (including 1940 models), AIRTEX Fuel Pumps are guaranteed for operation and performance, are quality pumps built for lasting service.

Don't give your good customers old, second-hand rebuilds when you can install brand new AIRTEX Fuel Pumps at approximately the same cost—and still get a substantial allowance from your jobber for old pumps.

**Check these
FEATURES:**

- ✓ A 50,000 mile guaranteed AIRTEX Diaphragm in every pump.
- ✓ Hardened and ground Rocker Arms with well-finished, tested castings.
- ✓ Properly engineered parts for perfect internal coordination.
- ✓ Tested for rocker arm position, pressure maintenance, and suction.
- ✓ Each unit attractively boxed, ready for installation.

Ask your Jobber today about AIRTEX Replacement Fuel Pumps for all cars.

CHEFFORD MASTER MANUFACTURING CO. INC.
AIRFIELD ILLINOIS

**This Is
SHOP TALK**



**... And It's
Right Down Your Alley!**

There's no substitute for Kester Cored Solders when you're making high grade auto repairs. And that's the only kind of repairs worth making—the kind that brings your customers back for more—the kind that increases your profits and builds your business.

Kester Acid-Filled Solder takes care of all general repair work. The virgin-metal alloys and scientifically controlled flux speed up your work and eliminate costly do-overs.

Kester Radiator Solder is a sure-shot repair material that good mechanics everywhere swear by—not at.

Kester Rosin-Core Solder is tops for all electrical and radio work—an important source of big shop profits.

Kester Body Solders help you rebuild wrecks and make 'em look like new—big money in this kind of work, too.

Keep these Kester Solders on hand all the time. Use them on every job and be proud of your workmanship. *It's good business!*

KESTER SOLDER COMPANY

4242 Wrightwood Avenue

Chicago, Illinois

Eastern Plant: Newark, N. J.

Canadian Plant: Brantford, Ont.

**KESTER CORED SOLDERS
FOR EVERY AUTOMOTIVE USE**

**from
THIS
TO
THIS!**

EIS Super '40 BRAKE FLUID

IN a few short months—from a modest start—the sales volume of Eis Super "40" Brake Fluid has leaped to amazing proportions—and a commanding position in the brake fluid field.

High pressure salesmanship didn't do it. Exaggerated advertising statements didn't do it. We use neither.

What then?—Quality—sheer Merit—outstanding performance—the ability to fully meet all the requirements that go to make up a strictly high grade, dependable, economical brake fluid!

Give Eis Super "40" a trial. You'll like it. So will your customers. If your jobber can't supply you send us his name.

EIS MANUFACTURING CO., INC.
"The Complete Brake Parts Line"
Middletown, Conn.

EIS SUPER "40"
Non-corrosive. Contains no water or acid. Low evaporation. Exceptionally high boiling and low freezing point. Mixes with all fluids used and recommended by car and truck manufacturers.
3 oz. Cans to 55 Gal. Drums
FOR ECONOMY
Use the 15-30 and 55 gal. drums.



HERE'S NEWS!

THEXTON ANNOUNCES

NEW PISTON EXPANDER

See It at the
A. S. I. Show

After many months of experimenting and testing, the Thexton Mfg. Co. announces the perfection of a new and improved expander for increasing the thrust diameter of solid skirt pistons. A companion to the famous Thexton split-skirt piston expander, this new Expander embodies many exclusive features and greatly simplifies motor repair work. Get the facts now!

ASK YOUR JOBBER FOR FULL INFORMATION

THEXTON MANUFACTURING COMPANY, INC.

Minneapolis

ESTABLISHED 1907

Minnesota

New York

Philadelphia

Kansas City

Los Angeles

Seattle

San Francisco

Portland, Ore.

Canadian Branch: Toronto, Ontario

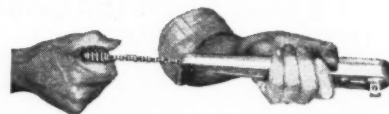
Service Schools Open

Chevrolet dealers' service managers and mechanics from coast to coast have embarked on their yearly period of training in the servicing of the new year's models. By mid-September, more than 25,000 service men will have been trained—in groups of 12—in factory practice and procedure as worked out for the new 1941 Chevrolets.

The first in a series of nearly 600 different schools was held in Detroit, under the supervision of Ed Hedner, national director of service, with Central Office service officials, Chevrolet's chief engineer and members of his staff, and the division's regional product representatives, in attendance. During the week of Sept. 3, these graduates, assisted by Central Office service officials, conducted similar schools in the nine regions of the country, where service managers from the 45 zones will convene.

New Type Ratchet Wrench

A new type of ratchet wrench, known as Speed-Ratch, has been developed by The Beall Tool Co., Division of Hubbard & Co., East Alton, Ill. To "break loose" a nut, this



ratchet wrench is operated in the same manner as an ordinary ratchet wrench, but when the nut has been loosened so that it turns freely, a pull-chain in the handle of the wrench is pulled, spinning the nut off the bolt or stud. It is not necessary to remove the wrench from the nut to operate the speedy ratchet. When installing the nut, the pull-chain ratchet can be used to run the nut down until it is tight, and then the ratchet wrench operates normally to tighten the nut. Handle is 10½ in. long, and wrench is made for ½ in. square drive sockets.

Charges Battery in the Car

Allen Electric & Equipment Co., 2101 North Pitcher St., Kalamazoo, Mich., is offering the new Allen F-160 Half-Hour Nitron Battery Charger for charging batteries in the car. This portable unit plugs in to any light socket and has long leads for connecting to the starter terminal and ground without removing the battery or disconnecting the battery cables. This unit enables charging to be done during a lubrication job, wash job, tune-up or other operation, saving the time and cost of removing and reinstalling the battery. In addition to the quick-charging feature, through the use of special wiring harness furnished with the unit, slow charging (8 to 12 hrs.) can be done on from one to eight batteries.

"LISTEN, JOE: FOR SERVICE PATRONIZE MY GARAGE MAN"...

"He rushed my replacements by RAILWAY EXPRESS
and had me fixed up as he promised, right on the dot!"



He was on the job, that garage man. He knew how valuable RAILWAY EXPRESS service is in the speedy handling of spare parts and accessories. He specified "RUSH BY RAILWAY EXPRESS," and made a friend for life. That's modern operation, as thousands of service stations and dealers know. Phone our local agent for rates, schedules and arrangements. He's a good man to know.

FOR SUPER-SPEED, SPECIFY AIR EXPRESS
3 MILES A MINUTE.
SPECIAL PICK-UP—SPECIAL DELIVERY

RAILWAY EXPRESS
AGENCY INC.

NATION-WIDE RAIL-AIR SERVICE

Want to Sell Safety and Economy in Your Lighting and Reflecting Devices



The STREAMLINER
Modernistic all purpose—
3 in line; Marlar, Clear-
ance, or Fender Lamp. No.
1209C, Full Chrome, List
\$1.50.



The ZEPHYR
More Light
Less Current
More Protection
Less time to change
bulb
No. 400-C Chrome, List
\$1.00.



Do-Ray "NOBBY"—with
flexible bracket. No. 1292-F,
List \$1.25.



No. 1118 Do-Ray Flexible
Type Clearance Lamp.
Flexible strap protects
against lens breakage.
List \$0.50.

DEPEND
ON



No. 70 The Giant Stoptite
with angle bracket—4
mounting positions. Over-
all dia. 7 1/2". List \$4.00.

No. 1214 Do-Ray Stop and
Tail Lamp with Tiger-Eye
Max Flex Reflecting Lens.
Has new extension angle
bracket. May be mounted
on top of panel trucks
where permitted or
below body of truck
where long exten-
sion bracket an-
nables lamp to clear
most obstructions.
List \$2.30.

Safety! Appearance! Economy!
The three big values built into
every Do-Ray Safety Lighting
and Reflecting Device. Styled
to match the most modern
streamlined truck—yet built
to take rough treatment. They
give satisfaction plus low cost
per mile. They're priced to
give you good profits.

Remember—The new I.C.C. regula-
tions go into effect October 1st.
Do-Ray Certified Products
meet local and I.C.C. regu-
lations. Get them from
your jobber and be safe.
DO-RAY LAMP COMPANY
1458 South Michigan Ave.
Chicago

DO-RAY

MOTOR AGE, October, 1940

When writing to advertisers please mention Motor Age

GET THE FULL CASH VALUE FROM YOUR TUNE-UP SERVICE



MODEL T-16

**MAKES EVERY
VOLTAGE REGULATOR
AND GENERATOR TEST**

Tune-up profits come faster and easier with this multi-purpose tester that accurately checks generator charging rates, field currents, regulators, relays and simplifies adjustments. It detects high resistance connections and indicates all load readings. Has attractive etched Aluminum panel and Grade "A" meters. Ask your Jobber's salesman TODAY or write for full details.

BRANCH: 1342 S. Flower St., Los Angeles, Cal.

C. E. NIEHOFF & CO.
4923 Lawrence Ave., Chicago, Illinois

DAN, THE RUBBER MAN, SAYS:



I'VE GOT
WHAT IT TAKES

TO STOP
RUBBER
SQUEAKS

100% SAFE!

RUGLYDE penetrates
the tightest fittings...
furnishes a tough, vis-
cous film which lubri-
cates and preserves
rubber. Contains *dag Colloidal
Graphite. Lasts the life
of a lube job.

Safe on Service Man! Non-
flammable — non-poisonous.

Safe on Car Finishes! Won't
harm the finest lacquers.

Approved by leading oil com-
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gallons.

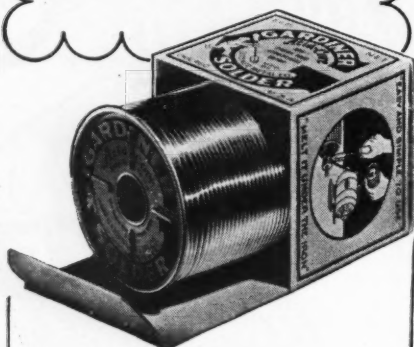


For rubber door seals, hood lacing,
and other parts requiring surface lu-
brication — use Door-Ease Stainless
Stick Lubricant. Won't soil clothing
or upholstery. Won't harm rubber or
car finish.



AMERICAN GREASE STICK CO., MUSKEGON, MICH., U. S. A.
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COLONIAL TRADERS, Ltd., 144 FRONT STREET W., TORONTO

Sets the Pace
**FOR QUALITY
and ECONOMY**



• The quick-acting flux of Gardiner Acid-Core Solder permits exceptionally fast, clean work. Unusually high tensile strength insures lasting bonds. Yet, thanks to modern methods exclusive with Gardiner, these better solders are low in first cost and most economical to use. Other Gardiner products famous throughout the automotive industry for top performance and bottom cost are Solid Wire, Bar and Body Solders . . . and Permanent Lining Babbitt metal.



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NEW RADIATOR

DRAIN COCK OPENER

...to speed up work—
and PROFITS—on
Cooling System Service!
Opens practically all
Radiator Drain Cocks
...a real Profit Booster
on Anti-Freeze business.

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FREE with any two
dozen cans of these
products:

Warner Liquid Solder

**Warner Radiator
Cleaner**

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YOU CAN'T BEAT THIS Signal-Stat COMBINATION



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GUARANTEED!*

BURN-OUT PROOF SWITCH

The only burn-out proof directional signal switch. Install with a complete set of Signal-Stats or as a replacement for any make of directional signals.

DIRECTIONAL LAMPS

Sturdily built lamps with aluminum reflectors, non-breakable acetate faces. Available in double-face, single-face and flush type units.

SIGNAL-STAT CORPORATION

68 JAY STREET

BROOKLYN, N. Y.

NEWSTOON

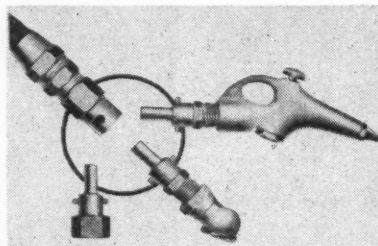
Caught by a howling blizzard on a New Mexico highway, Charley Huff, news editor of the Gallup Daily Independent believes he may have discovered a new windshield defroster.



Slipping and sliding on the slippery roads and having difficulty seeing through a fogged windshield, he ran his fingers through his hair and wiped off the windshield. It remained clear. Huff thinks the natural oil in his hair may have done the trick.

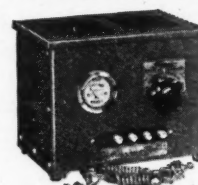
Air Hose Fittings

A combination of air operated devices with quickly detachable connections designed for the automobile service station has been announced by The DeVilbiss Co., 300 Phillips Ave., Toledo, Ohio. With these quickly detachable connections the operator can use duster, tire chuck, spray gun or



other pneumatic tools on the same hose line, with only a few seconds required for interchanging. The tire chuck is small and can easily be carried in the operator's pocket, while the duster is also small and is designed to reach the normally inaccessible places.

Handy BATTERY CHARGERS



New, improved ventilation—cool, low-cost operation and longer life. 2 YR. GUARANTEE. Get Bulletin 74 on Complete \$2800 less 12-Batt. Size bulb

BALDOR ELECTRIC CO.
4375 Duncan Ave.,
ST. LOUIS, MO.

NEW SpeedWay 1/2" No. 89 DRILL

Full size, full weight, full capacity. Specially wound, high torque 115 V Universal 500 r.p.m. SpeedWay Drill Motor. Forced air cooling, oilless bearings, new, natural grip breast plate and removable side handles. Streamlined die cast case. If your dealer can't supply, order direct on 10 day trial.



SpeedWay Mfg. Co., 1880 S. 52nd Ave., Cicero, Ill.

DON'T FILE POINTS!

Flex-Stone
REG. U.S. PAT. OFF.

Flexible Contact Dresser

- Takes the hardest of Tungsten Points.
- Bends in where a file can't reach.
- Cleans and Dresses all Electrical Contacts.

Ask Your Jobber or Write Direct

RINCK-McILWAINE, Inc., 16 Hudson St., New York

FOR FREE COPY
of this new
folder on head-
light service
ask your G-E
distributor's
salesman!



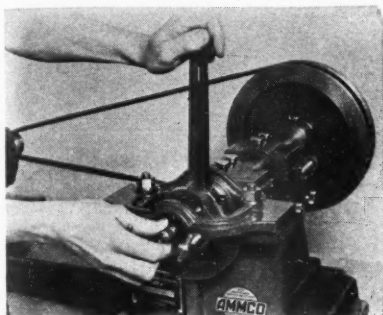
G-E MAZDA AUTO LAMPS
GENERAL ELECTRIC

Glover Resigns

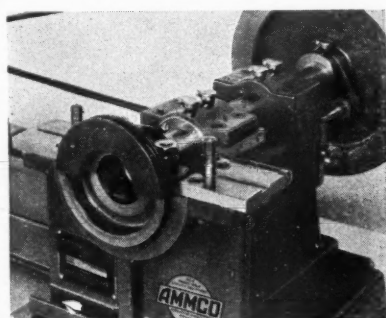
The directors of Reo Motors, Inc., announce the resignation of Colonel Fred Glover as president and director of the corporation. Glover recommended, inasmuch as the Reorganization Plan was practically completed and the new manufacturing program was well under way, that his resignation be accepted. W. C. Wood has been elected vice-president. All other executives remain unchanged.

Attachment for Repairing Ford Engines Announced

A con-rod attachment for the Ammco bearing boring machine and a Ford main bearing cap holding fixture for the same machine are two of the latest time and labor saving items to be introduced by the Automotive Maintenance Machinery Co., 2100 Commonwealth Ave., North Chicago, Ill. The



Ammco Centering Rod in Fixture



Ammco Ford Main Bearing Cap in Place Ready for Boring

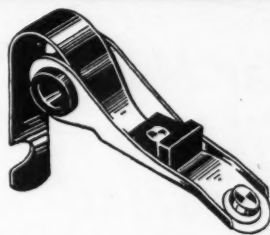
con-rod attachment consists of a holding fixture, 10 insert rings, centering mandrel, nuts and washers, and is furnished complete with "T" handle wrench. This fixture provides an accurate means of boring semi-finished babbitted con-rods to any desired undersize. The Ford main bearing cap holding fixture provides for boring main bearing caps.

Harrison Heaters

A new line of Harrison Twinflow heaters for 1940-41 is now available through United Motors Service dealers. The new line consists of one high-output underseat heater and two high-output dash type heaters.

The underseat heater is designed for mounting under the front car seat and delivers heat at floor level forward and backward by the use of a propeller type fan, forcing air through two special radiator cores.

The Super-Heater and the Master Heater are for dash type mounting, and are said to be of new design and to have high efficiency in heat output. All three heaters are equipped for defroster installation, and two different Harrison defroster units are available.



Other PRODUCTS by TUNGSTEN

Brushes
Bushings
Coils
Condensers
Cutouts
Distributor Parts
Gears
Horn and Light Relays
Magneto Parts
Starter Parts
Switches
Voltage Regulators
Miscellaneous Parts

TUNGSTEN SCORES AGAIN with the SUPER CONTACT POINT

Today's high-speed, high-compression engine, to meet successfully exacting service requirements, needs a greater capacity point than formerly. Heavy weather, with its resultant hard starting, throws extra strain upon the contact point causing pitting and overheating.

TUNGSTEN'S SUPER CONTACT POINT, skillfully engineered, accurately constructed from highest quality materials, eliminates these hazards. With 60% greater disc area, the SUPER CONTACT POINT permits heavier amperage load, insures easier starting and smoother performance with longer life than the regular contact point.

Checked and rechecked to hairline accuracy from the raw ore state to the final finished stage, TUNGSTEN SUPER CONTACT POINTS are guaranteed to furnish service above the average . . . for a period far beyond the average.

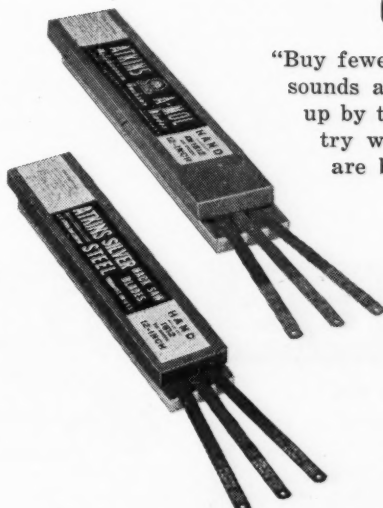
Write for our catalog today.



TUNGSTEN CONTACT MFG. CO.
NORTH BERGEN, NEW JERSEY

BUY FEWER BLADES

To Handle The Same Volume of Metal Cutting



"Buy fewer blades to do the same amount of work" sounds almost too good to be true, yet it's backed up by the hundreds of shops throughout the country whose repeated purchases of Atkins Blades are based on that one point alone. So, if you

haven't tried an Atkins in your shop, order a trial supply. Put them up against the saws now being used. Find out how these tough, rugged blades can help you pull down metal cutting costs . . . by yielding more cuts per blade . . . by cutting metal faster . . . by turning out more accurate cuts. Ask your jobber to recommend the type and size best suited to your work.

1st Above: ATKINS SILVER STEEL BLADES—champions for 15 years and still unsurpassed for economical metal cutting. Identified by Blue Ends.

2nd Above: ATKINS A-MOL BLADES—Molybdenum Blades of "D-B-L" Special Saw Steel. Identified by Yellow Ends.



Clean Those Used Car Motors The **EASY, THOROUGH** Way for Easier Sales!



GET THE FACTS THAT PROVE IT

Write for your copy of this new collection of performance data in which users of Magnusol and other Magnus Automotive Cleaning specialties tell about the results they are getting compared with formerly used methods and materials.

No matter how shiny and attractive the body looks, no modern prospect wants a used car with a dirty, mucky motor. You can make every motor on your lot as clean and snappy looking as new. Use the easy, economical, safe method of

MAGNUSOL

There never has been any cleaner as satisfactory and as low in overall cleaning cost as Magnusol—though it has been imitated widely.

It takes the cling out of grease, dirt and oil. You simply spray it on, let it soak for fifteen minutes, then flush off the motor with water. All traces of dirt and grease are removed, leaving a completely clean motor.

Safe—non-inflammable—harmless to skin and metals, Magnusol does a *thorough* job and leaves no disagreeable after-odor. Quickest in action, low in labor and cleaning costs per motor—use Magnusol for every motor cleaning job.

MAGNUS CHEMICAL COMPANY

Manufacturers of Cleaning Materials, Industrial Soaps, Metallic Soaps, Sulfonated Oils, Emulsifying Agents and Metal Working Lubricants.

36 South Avenue

Garwood, N. J.



MAGNUS CLEANERS

I.C.C. Safety Regulations For Private Carriers

The order of the Interstate Commerce Commission, bringing private carriers engaged in interstate commerce under practically the same safety regulations as common and contract carriers, became effective on October 1. Private carriers are required to meet a minimum standard of performance and must be equipped with safety devices such as flares and fire extinguishers.

Levy Buys a Million Dollars Worth of 1941 Studebakers

A certified check for one million, one thousand and nine dollars was handed to George D. Keller, vice-president of The Studebaker Corporation, last month by Henry R. Levy, president of The Studebaker Sales Corporation of Chicago. The check was in payment for Levy's initial order of 1941 Studebaker automobiles, which will be sold in and around Chicago.

Spee-Dee Cable Splice

Spee-Dee cable splice and terminals are the latest items to be added to the line of the Whitaker Battery Supply Co., North Kansas City, Mo. The Spee-Dee splice consists of a soft metal tube covered with rubber. To use, a mechanic simply strips the wire and inserts the splice, and then compresses the splice together with ordinary pliers. The splices are available in four sizes: No. 816 for 18 and 16 gage cable; No. 814 for 14 gage



cable; No. 812 for 12 gage cable, and No. 810 for 10 gage cable.

In addition to the four sizes of connectors, there are three sizes of Spee-Dee splice terminals: 5/32 in. stud hole, 13/64 in. stud hole and 13/32 in. stud hole.

These products are put up in standard packages and in popular assortments, and distributed through automotive jobbers.

Tests All Anti-Freeze

A new Freezetester announced by The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago, Ill., is said to be capable of testing over 100 anti-freeze solutions. In addition to showing the freeze temperature of the solution, a scale incorporated in the Freezetester shows how much anti-freeze should be added to bring the solution to the desired temperature protection. Gives fast and accurate reading. Dealer's price \$3.45.



RETREADS



"For want of a tire the car was lost . . ."

The old fable has been modernized a bit, but the idea is basically the same. Many a good car has been lost through lack of good tires. When your customers are seeking a safe, economical solution to worn tire problems . . . advise SKINNER RETREADS. Safety, appearance, performance . . . at a price to fit any purse.

Write for details today.

SKINNER TIRE & RUBBER CO.
Springfield, Ohio

SKINNER

Are You Missing a Bet?

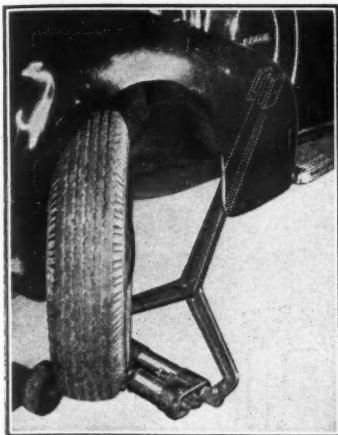


EVER think of the extra profits you could be making if your shop were equipped to balance wheels? Practically every car that comes into your shop needs this service. L & H Balancing Weights are being installed to the tune of millions a year. Why not get your share of this business? Write and get the low-down! (Pat. No. 2036757.)

HARLEY C. LONEY CO.
16883 Wyoming
Detroit, Mich.

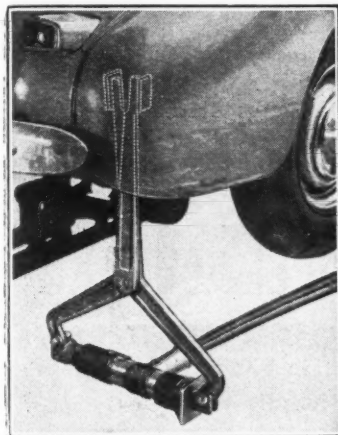
Write for Literature

L & H Wheel Balancing Weights



Wipe off Those Frowns

in your collision department with



The New H-289 Perfection Power Plus UNIVERSAL FENDER SPREADER

IT pays for itself on the first half dozen jobs on the modern deep construction fenders. Ideal for close work where wide spreading is necessary. Fills a long felt need for spreading between fender and fender well. Closes to 1 1/4" and opens to 19 1/4" with 6" ram travel.

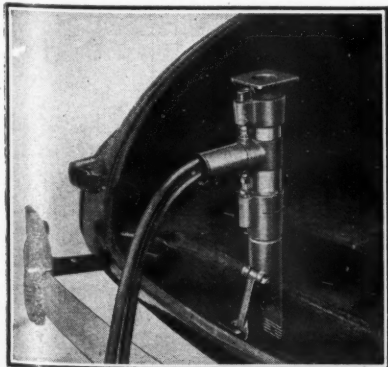
Models H-289 Price \$12.50

H-80 Perfection Power - Plus Push - Pull Spreader. (For use only with Perfection Push-Pull Jack.) Power in a small area. Ideal for trunks, pushing out sills, etc. Will fit into 1" space. Open width 5 1/2".

Price \$8.50

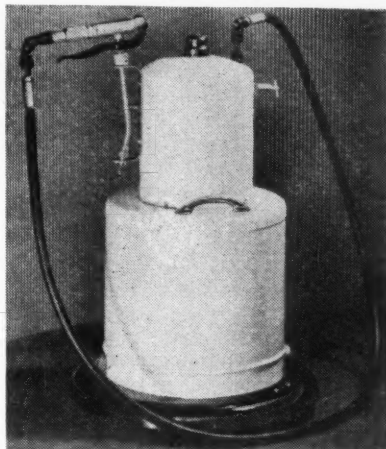
Order at once through your jobber.

G. A. C. Mfg. Co.
Ashland, Ohio



Balcrank Chassis Lubricator

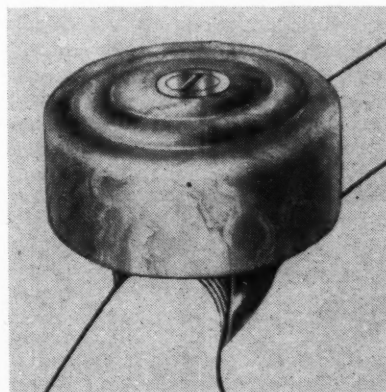
The Cincinnati Ball Crank Co., Oakley, Cincinnati, Ohio, has announced its Model 257 Chassis Lubricator. This new model has a capacity of 25 lbs.; is equipped with an air operated double acting pump which is said to deliver grease pressures from 40 to 50 times the amount of air pressure used; has built-in auto-



matic charger which assures constant delivery of any type lubricant regardless of weather conditions. Unit is built with slip-off steel jacket, finished in high luster white baked enamel. Easy-rolling, composition casters provide smooth noiseless portability.

New Wheel Spinner

A new wheel spinner, for which new features are claimed, has been announced by Peters & Russell, Inc., Springfield, Ohio. The new spinner is named Par Loboy, and is broad and



flat so that it hugs the wheel—there are no projections which might catch clothing. An additional safety feature is the easy attaching mechanism which makes it possible to attach the Loboy anywhere on the rim, not necessarily at a spoke. Because of its broad, flat surface, the driver can control the car by merely resting the palm of his hand on the Loboy. It is made of heavy steel stampings, capped with mottled ivory tenite, with chrome trim.

Here are 3 "KING" TESTERS
THAT GIVE YOU Everything

1 The "KING" UNIT TESTER K-400



The
"KING"
K-400

\$198.00
Complete
as shown

SOLD
ON
DEFERRED
PAYMENTS

Do you realize HOW LITTLE it would cost to modernize your shop with "KING" Testing Equipment? The three "KING" Testing Units illustrated enable you to make every conceivable motor and ignition test, and all three cost only \$263.00. They may be purchased on small monthly payments. They will enable you to locate trouble quickly and reduce labor costs—in fact they will soon pay for themselves. The "KING" K-400 Unit Tester has the following five units which may be purchased separately: (1) Motor and Ignition Tester; (2) Generator Voltage Regulator Tester; (3) All Electric Spark Plug Tester; (4) New oscillator type Condenser Tester; (5) Exhaust Gas Analyzer with vacuum and fuel pump test.

2 "KING" ONLY \$42.50 R.P.M. INDICATOR



The "KING" Electro-Tach (or R.P.M. Indicator) simplifies timing of the ignition and carburetor adjusting, is used for testing engine balance and also has many other uses. All meter wavering has been overcome by taking the more rapid impulses from the primary of coil or distributor instead of the spark plug. It requires no balancing or disconnecting of wires. Operates from 6-volt battery.

3 "KING" \$22.50 CAM ANGLE METER

The "KING" Electronic Cam Angle Meter (patent applied for) enables you to test and adjust distributors quickly and accurately. With one scale only on meter dial the answers are easy to read. It will give accurate readings at ANY SPEED and will not vary more than one degree from idling to top speed. Voltage range will not affect reading. Is the only positive method of setting breaker points.



Ask our Jobber or Write us Jobber's Name

The ELECTRIC HEAT CONTROL Co.
9123 INMAN AVE. CLEVELAND, OHIO
"KING" Good Products Since 1914 "KING"

WESCO TIRE CHAINS



Again WESCO leads by exactly meeting motorists' needs

New Double Service Chains engineered to today's toughest driving conditions—glazed top, and ice patch on hard roads. Smoother riding with double gripping points and double life for they are double-thick and double-welded at points of wear.

Write for Catalog Sheets

WESTERN CHAIN PROD. CO.
1812 Belmont Ave., Chicago, U.S.A.
There's a Wesco Warehouse near you

Follow THE PREDICAMENTS OF~ CHARLOTTE SOUTHERN (WOMAN DRIVER)



SOUTHERN
FRICTION MATERIALS CO.-CHARLOTTE, N.C.

Official Red Book—Blue Book Used Car Appraisal GUIDES

Since 1911—the standard used car and truck appraisal guides. Identification data; specifications; serial and motor numbers; weights; horsepower; etc. Cash, finance, tax or OAN values, and also maximum allowance or retail sales values. By yearly subscription: Red Book \$7; Blue Book Pocket Edition \$5; West Coast Blue Book \$5; Executive's Edition Blue Book \$12. Order now—Address—Dept. MA-40.

**NATIONAL USED CAR
MARKET REPORT, INC.**
1315 South Michigan Avenue, Chicago

Alemite Low Pressure Foot Gun Introduced

A new low pressure volume delivery foot gun, designated as Model 6697-A, is announced by the Alemite Division of Stewart-Warner Corp., Chicago, Ill. The gun has a capacity of 25 lb., and pumps approximately



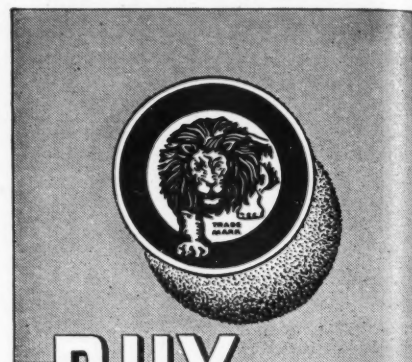
1 cu. in. of grease per stroke. Maximum pressure when operated by hand is 3000 lb., and when operated by foot, 5000 lb. It is equipped with a 7-ft. hose and delivers 1 oz. of lubricant to every three strokes. The new gun is recommended by the manufacturer for the lubrication of trucks with big wheel bearing and universal joint capacity, and gear boxes on large industrial equipment.

New Westinghouse Fog Lamp

A new fog lamp incorporating the advantages of Mazda Sealed Beam lamp construction has just been announced by the Westinghouse Lamp Division of Westinghouse Electric & Mfg. Co., Bloomfield, N. J. The new lamp is intended to produce a beam of light with a sharp upper cutoff, having its maximum intensity directed toward the right curb area. The lamp is the same size as the driving and passing lights recently announced, and may be used in the same housings. List price of the Mazda fog lamp is \$1.10; when supplied with amber lens, \$1.35.

Brake Pliers Improved

The Vacuum Grip brake pliers made by Forged Steel Products Co., Newport, Pa., and listed as their No. 70A, have been improved to increase their serviceability, according to the manufacturer. Designed to remove and replace the horse shoe lock from the anchor pin, the new pliers have a serrated jaw with tips bent at the correct angle, and the nose spread has been increased from 1-1/16 in. to 1 3/4 in. A new special feature is the expansion spring between the handles, which serves to contract the jaws, automatically holding them in the correct position for use.



BUY at the sign of the LION

for Dependable
Quality Automotive
Parts, Supplies,
and Accessories

Write for Our New 1940 Catalog—Just off the Press

LION AUTO PARTS & MFG. CO., Inc.
1920 S. MICHIGAN AVE. CHICAGO, ILL. 2214-16 MAIN ST. DALLAS, TEXAS

New Branch: 1239 Osborne St., Montreal, Canada

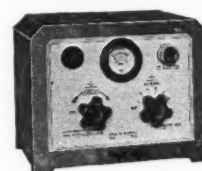
YOU'LL NEVER KNOW

● THE PROFIT OPPORTUNITY in Fitzgerald Gaskets until you handle them.

THE FITZGERALD MFG. CO., TORRINGTON, CONN.

FITZGERALD GASKETS

NEW! ANNOUNCING VALLEY SUPERDUTY CHARGERS



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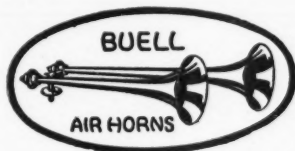
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CLASSIFIED ADVERTISEMENTS

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Their Cost.

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assured by their high tensile strength, quick-acting
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hose sizes. Type GBB heavy
duty, solid band for Booster
Brakes. GSHH for all heater
hose. Type HP for all high
pressure air and gas lines.
Sold by dealers and jobbers
everywhere.

WITTEK MFG. CO.
4305 W. 24th PL., CHICAGO, U.S.A.

Brookins Line Has New "Lifetime Lustre" Finish

A new finish for the line of oil
measures and canned oil dispensers
has been adopted by the Brookins
Mfg. Co., division of The Cincinnati
Ball Crank Co., Disney St., Oakley,
Cincinnati, Ohio. This new "Lifetime
Lustre" is a silver-like finish, replac-
ing the copper finish formerly used.
In addition to its ability to take hard,
every-day wear, other claims for the
new finish are that it is highly re-
sistant to alcohol, and will not show
finger prints.

New Regulator For Sight Feed Generators

The Sight Feed Generator Co.,
Richmond, Ind., has developed a new
two-stake regulator for use with cur-
rent and past model Sight Feed gen-
erators. This regulator is said to elim-
inate the objectionable features of the
regular line regulator. The large di-
aphragm assures an absolutely even
pressure at all times, and fits in the
outlet valve opening.

"Tuff-Shell" Mufflers

The AP Parts Corp., 1801 Spiel-
busch Ave., Toledo, Ohio, has an-
nounced a new line of mufflers using a
new material which the manufacturer
guarantees will not rust out during
the life of the car on which it is in-
stalled. The new line is to be known
as AP "Tuff-Shell" mufflers; each one
is painted aluminum with red bands
around the circumference. Made of
20-gage shells with spun heads and
crimped seams, the inner construction
is said to be duplicate of factory
equipment.

Goodrich Heaters

A complete new line of automobile
heaters, featuring greater heating
capacity and increased efficiency, is
announced by the automotive acces-
sories division of B. F. Goodrich Co.,
Akron, Ohio. Four new heaters, in-
cluding an "under-seat" unit, and a
new "Super defroster," make up the
line.



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